SONY

3-750-188-21 (1)

Color Rear Video Projector

KPR-46CX50 (USA)

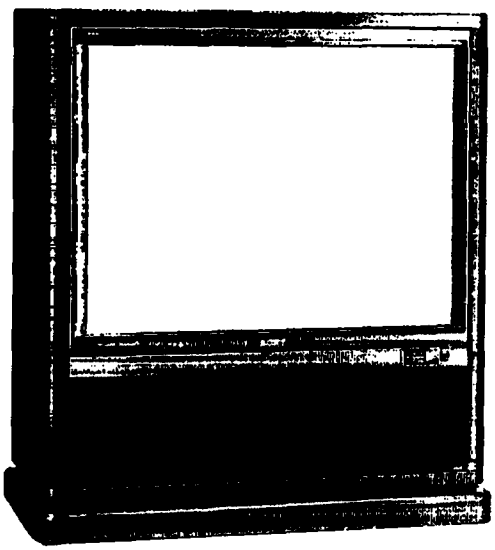
Operating Instructions

Before operating the unit, please read this manual thoroughly, and retain it for future reference.

Owner's Record

The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. KPR-46CX50 Serial No. _____



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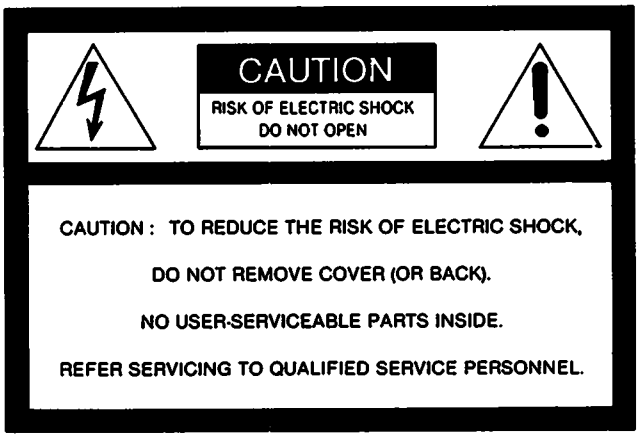
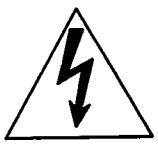
WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

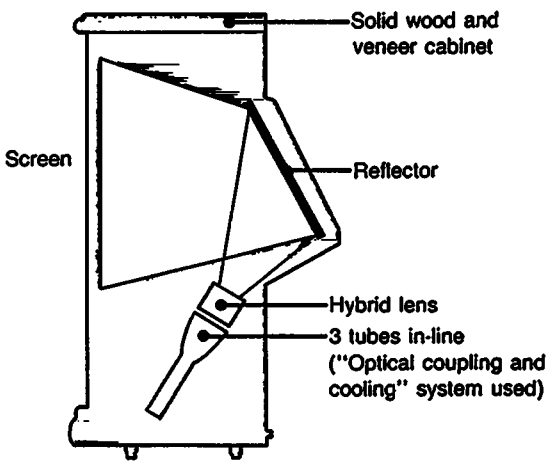
CAUTION:
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

Use of this color rear video projector for other than private performance of programs broadcast for the use of the general public may require authorization from the transmitter and/or owner of such programs. Use with cable television transmission may require authorization from the cable system transmitter and/or program owner.

Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Features

This color rear video projector projects TV pictures on a self-contained 46-inch screen (measured diagonally).



- **Multiband VHF/UHF/CATV tuner** receives up to 125 cable channels for total of 181 possible off-air and cable channels.
- **Built-in MTS (Multichannel TV Sound) decoder** enables reception of stereo programs and Second Audio Program (SAP) broadcasts.
- **S VIDEO INPUT jack** which is connected to the S video output jack on the VCR allows superior pictures from the VCR to be displayed on the screen.
- **Built-in video and L/R audio line outputs** provide the selected output from the TV tuner or any of the equipment connected to the audio/video line inputs.
- **MATRIX SURROUND button** enhances stereophonic effect.
- **On-screen displays** for easy reference to operating modes and adjustments.

The supplied Remote Commander provides you many other convenient features.

- **The programmable remote commander** allows you to operate video equipment made by Sony or other manufacturers.
- **Picture-in-picture feature** lets you watch more than one channel at once. TV channel or a video source can be displayed in a box inset into the corner of the primary screen.
- **Sleep timer automatically** turns off the projector after approximately one hour.
- **Automatic programming** to preset all receivable channels instantly.
- **ANT/AUX button** permits one-touch selection of pay cable TV when a converter is connected.
- **Internal clock** for the current time display.

Precautions

Safety

- Operate the unit only on 120 V AC.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

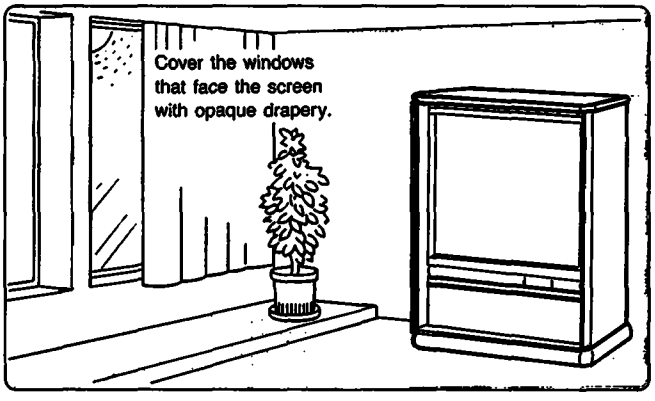
Installation

- To prevent internal heat build-up, do not block the ventilation openings.
- Do not install the unit in a hot or humid place or in a place subject to direct sunlight, excessive dust or mechanical vibration.
- Avoid operating the unit at temperatures below 5°C (41°F).
- After the unit has been transported from a cold location directly to a warm location, or if the room temperature has changed suddenly, pictures may be blurred or show poor color over portions of the picture. This is because moisture has condensed on the mirrors or lenses inside the projector. Wait until the moisture evaporates.
- Avoid placing the unit on a slanting or uneven floor.

Illumination

To obtain a clear picture, the screen should not be exposed to illumination or sunlight directly from the front.

Spot lighting whose light comes down from the ceiling is recommended.



It is desirable to install the projector in a room whose floors and walls are not of light-reflecting material.
If these are of reflecting material, it would be desirable to change to a dark carpet or wall paper.

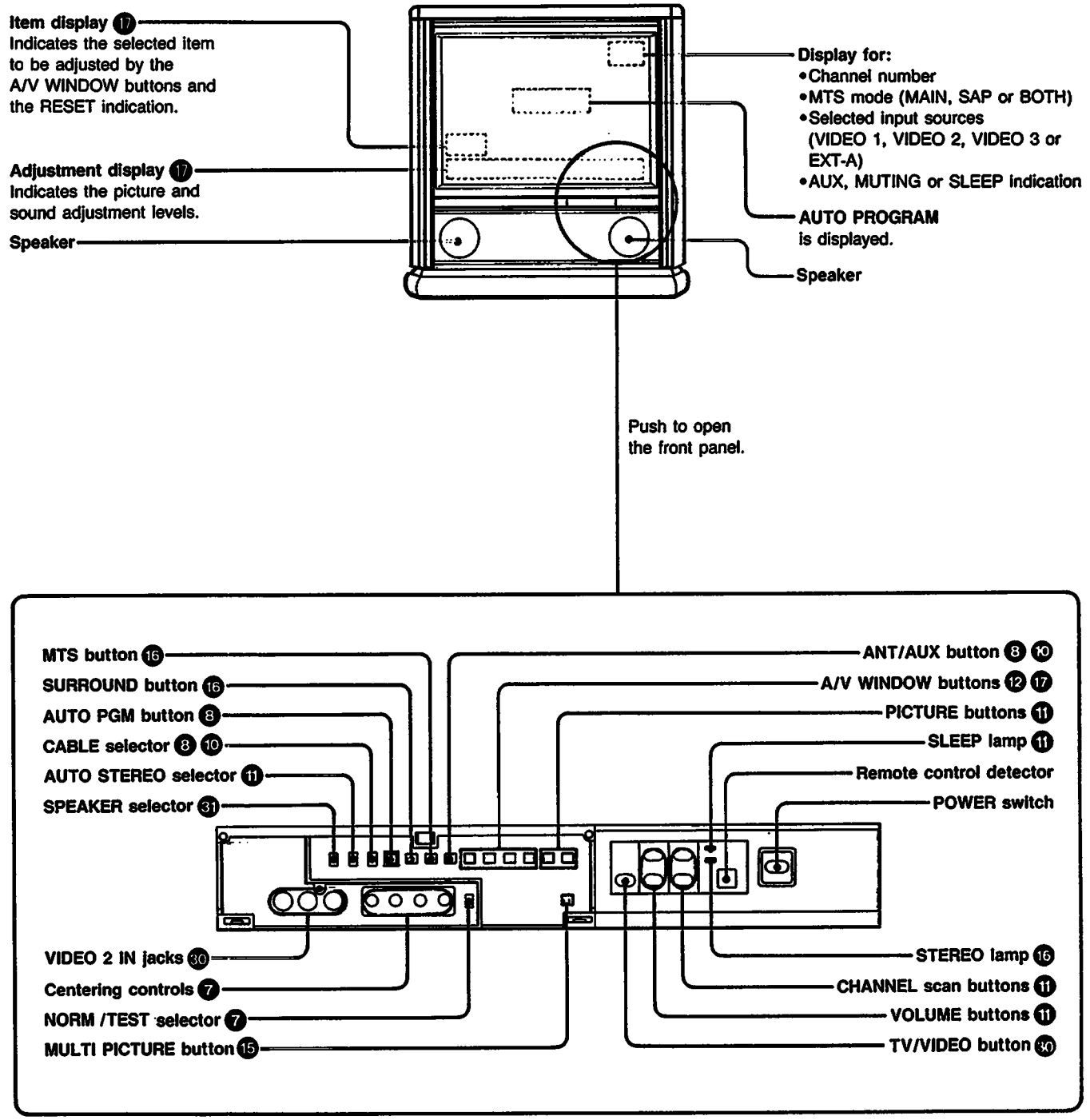
Maintenance

- Save the original shipping carton and packing material; they will come in handy if you ever have to ship your unit. For maximum protection, repack your unit as it was originally packed at the factory.
- To keep the cabinet looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth slightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since these will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.
- To remove dust from the front of the screen, unplug the unit and wipe it gently with a soft cloth slightly dampened with water or a mild detergent solution, using vertical strokes only. Then wipe it again with a dry, soft cloth. Never use solvents or thinners for cleaning purposes.
- If the picture becomes darkened after the unit has been in use for a long period of time, cleaning the inside of the unit may be required. Consult qualified service personnel for this.

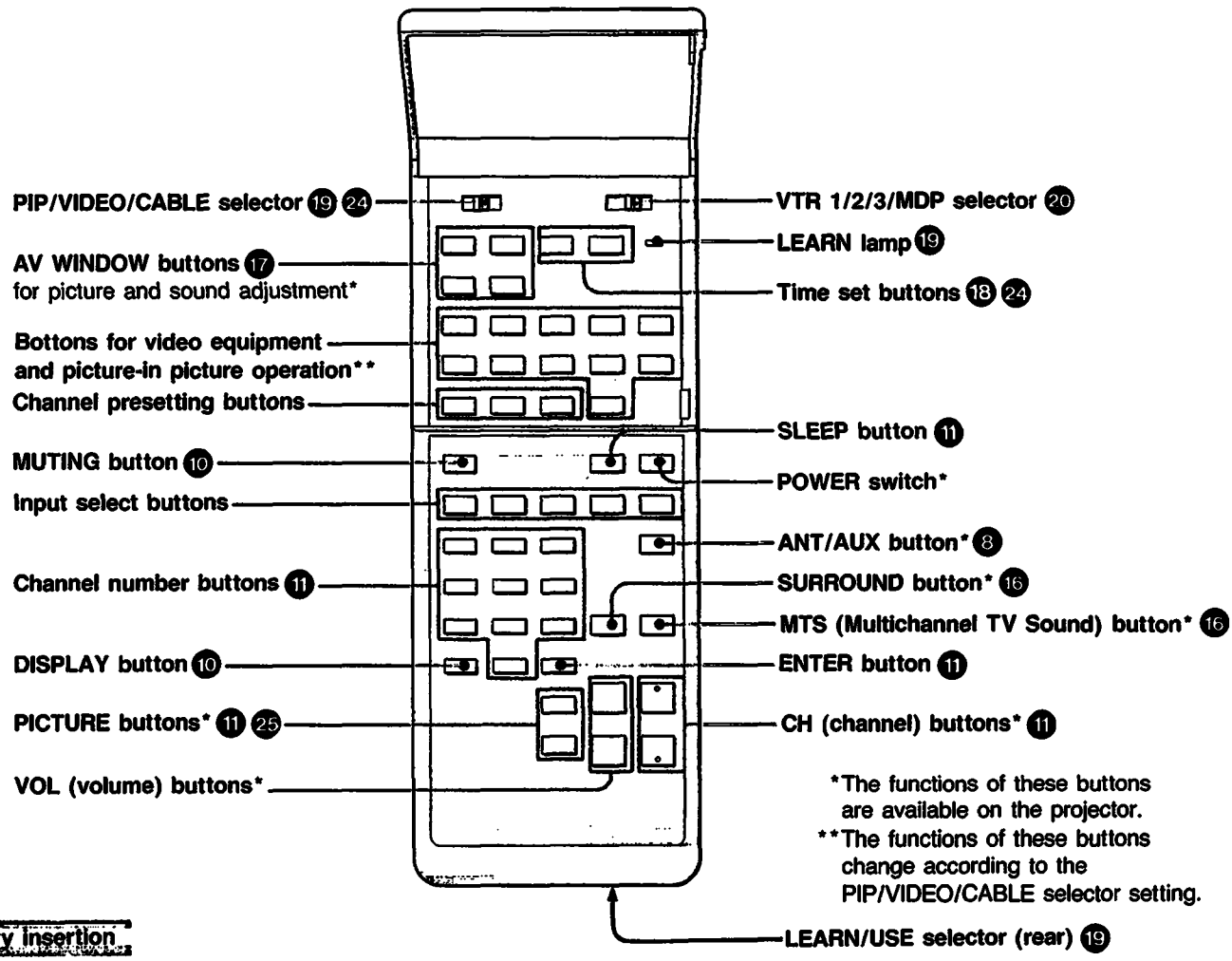
Location of Controls

For details, refer to the pages indicated in the circles.

Front

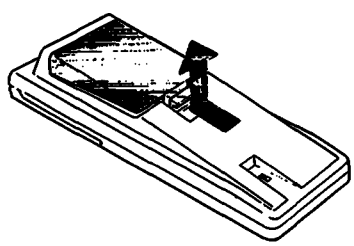

Item display 17
Indicates the selected item to be adjusted by the A/V WINDOW buttons and the RESET indication.
Adjustment display 17
Indicates the picture and sound adjustment levels.
Speaker
Display for:
•Channel number
•MTS mode (MAIN, SAP or BOTH)
•Selected input sources (VIDEO 1, VIDEO 2, VIDEO 3 or EXT-A)
•AUX, MUTING or SLEEP indication
AUTO PROGRAM is displayed.
Speaker
Push to open the front panel.
MTS button 16
SURROUND button 16
AUTO PGM button 8
CABLE selector 8 10
AUTO STEREO selector 11
SPEAKER selector 31
VIDEO 2 IN jacks 30
Centering controls 7
NORM /TEST selector 7
MULTI PICTURE button 15
ANT/AUX button 8 10
A/V WINDOW buttons 12 17
PICTURE buttons 11
SLEEP lamp 11
Remote control detector
POWER switch
STEREO lamp 16
CHANNEL scan buttons 11
VOLUME buttons 11
TV/VIDEO button 30

Remote Commander RM-766

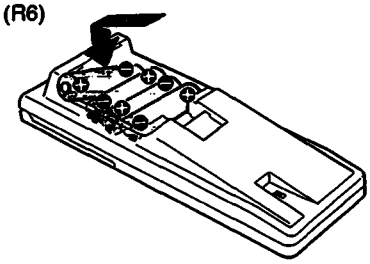

PIP/VIDEO/CABLE selector 19 24
AV WINDOW buttons 17
for picture and sound adjustment*
Bottons for video equipment
and picture-in picture operation**
Channel presetting buttons
MUTING button 10
Input select buttons
Channel number buttons 11
DISPLAY button 10
PICTURE buttons* 11 25
VOL (volume) buttons*
VTR 1/2/3/MDP selector 20
LEARN lamp 19
Time set buttons 18 24
SLEEP button 11
POWER switch*
ANT/AUX button* 8
SURROUND button* 16
MTS (Multichannel TV Sound) button* 16
ENTER button 11
CH (channel) buttons* 11
*The functions of these buttons are available on the projector.
**The functions of these buttons change according to the PIP/VIDEO/CABLE selector setting.
LEARN/USE selector (rear) 19

Battery Insertion

1



2 Insert four size AA (R6) batteries with the correct polarity.



Replace the lid.

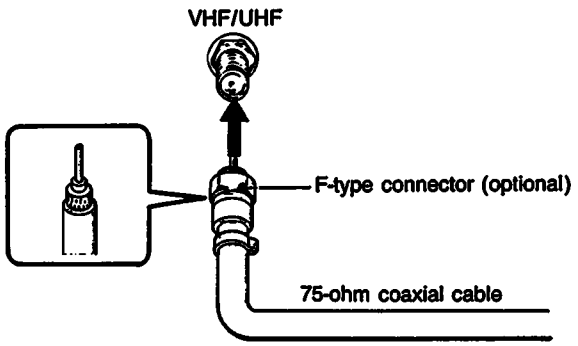
Notes

- In normal operation, batteries will last up to half a year. If the unit does not operate properly, the batteries might be exhausted. Replace all with new ones.
- To avoid damage from possible battery leakage, remove the batteries for extended unused periods.
- Be sure that there are no obstructions between the Commander and the unit.
- Operable range is limited.
  The shorter the distance between the Commander and the projector, the wider the angle within which the Commander can control the projector.

Connecting TV Antenna/Cable

Using an outdoor antenna may be necessary. Cable TV reception is only possible by connecting a cable supplied by your local operator.
Prepare the antenna or cable end using the appropriate connector, and connect the antenna or cable to the antenna terminal of the unit. (See A, B, C, D or E below.)

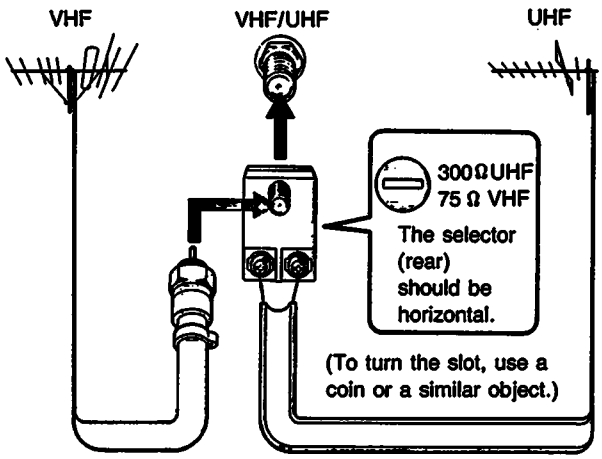
A Combination VHF/UHF antenna,* VHF antenna or CATV cable



*Most combination antennas are equipped with a signal splitter. Take off the splitter and attach the proper connector.

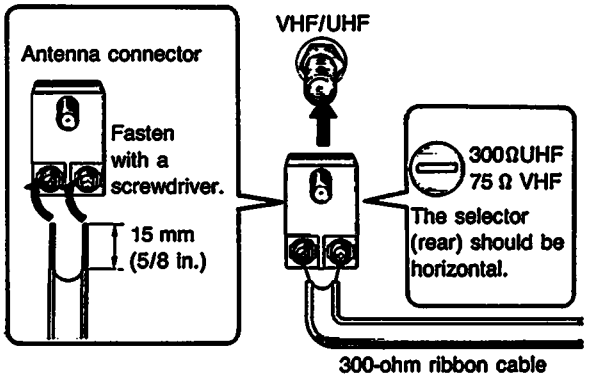
B When both VHF and UHF antennas are connected

Prepare the VHF antenna end using the appropriate connector as illustrated in A.
Attach the supplied antenna connector to the TV antenna terminal, and connect the cable to the connector. (For UHF, see C.)



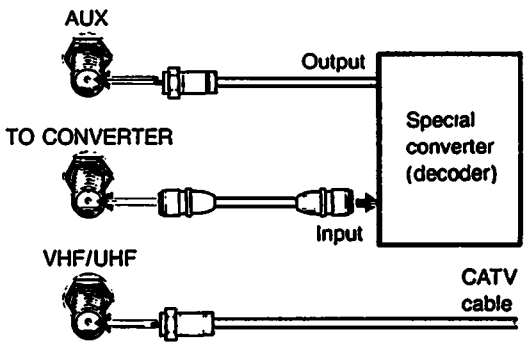
When the cable is connected to the TV in this way, snow and noise may appear in the pictures of the cable TV channels over 37 (W+1).

C UHF antenna only



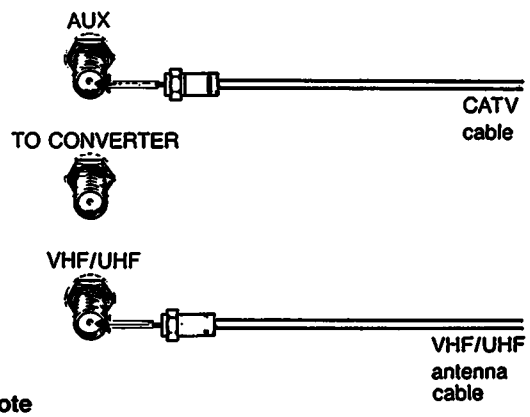
D Cable with a special converter (decoder)

Pay cable TV systems use scrambled or encoded signals and require special converters (decoders)* in addition to the normal cable connection. Connect the converter (decoder) with a 75-ohm coaxial cable (optional).



*The special converter (decoder) will be supplied by the cable company.

E When both VHF/UHF antennas and a CATV cable are connected



Note
In this case, do not connect anything to the TO CONVERTER terminal.

Registration Adjustment

When the red, green and blue lines are not superimposed (the cross is not seen as white), perform the registration adjustment. Should the difficulty persist, contact your Sony dealer.

Follow steps 1 through 6.

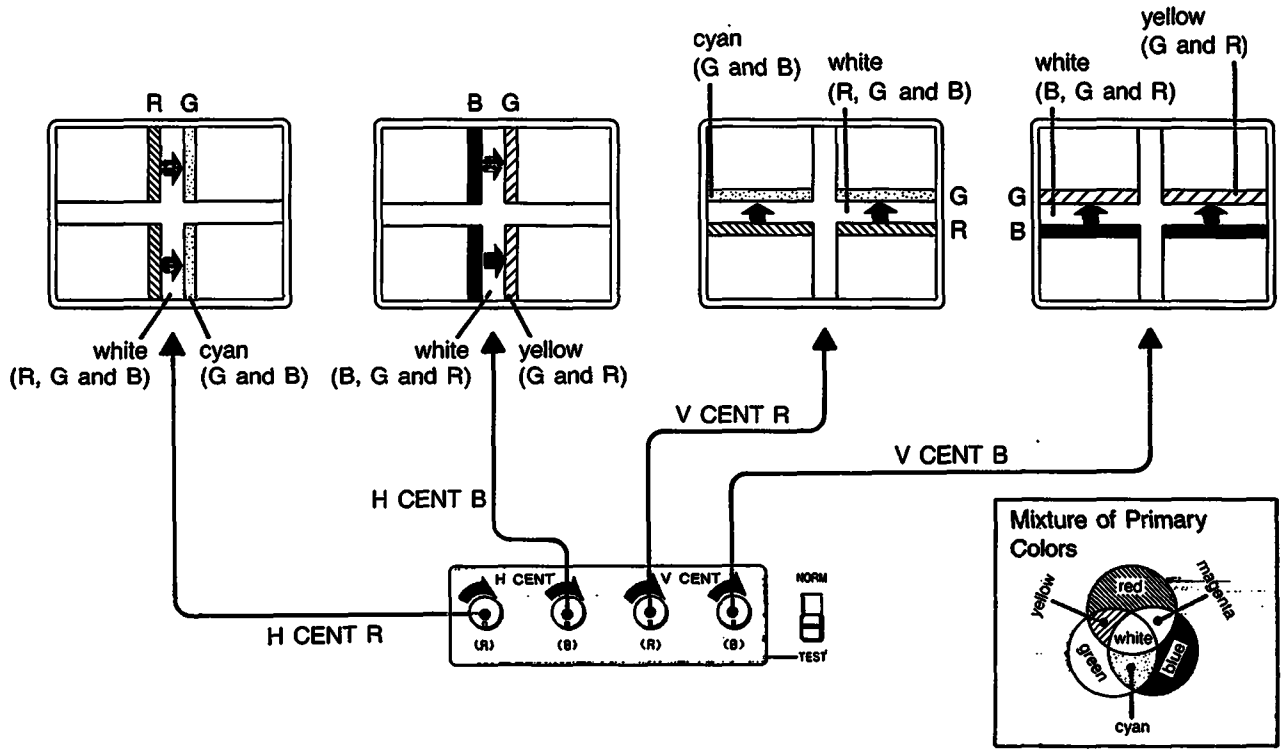
1 Press POWER to turn on the unit.

2 Open the front panel and set the NORM/TEST selector to TEST. A built-in test pattern will be displayed on the screen.

3 Adjust the H CENT (B) and H CENT (R) controls so that the blue and red vertical lines converge with the center line.

4 Adjust the V CENT (B) and V CENT (R) controls so that the blue and red horizontal lines converge with the center line.

(In the illustration below:
R = Red, G = Green, B = Blue)



As you turn the controls clockwise, the lines move in the direction indicated in the illustrations. To move the lines in the opposite direction, turn the controls counterclockwise.

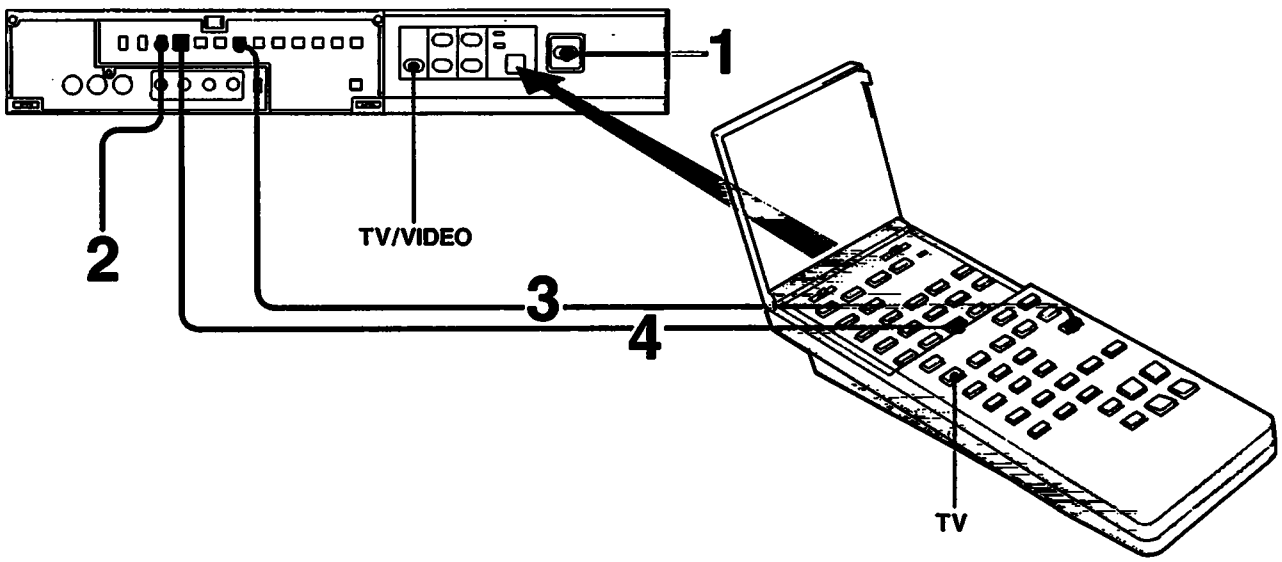
5 Repeat steps 3 and 4 until the cross appears white.

6 After the adjustment is completed, set the NORM/TEST selector to NORM.

Note

When the NORM/TEST selector is set to TEST, sound will not be heard.

Presetting TV Channels



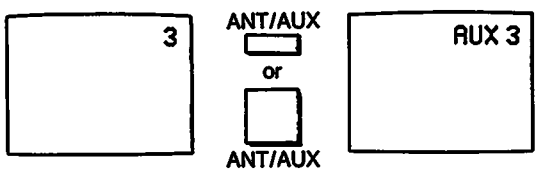
1 **Turn on the projector.**

2 **Set CABLE to the correct position.**

To preset cable TV channels

To preset VHF or UHF channels

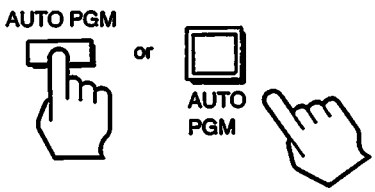
3 **Press ANT/AUX according to the channel to be preset.**



To preset VHF, UHF or regular cable TV channels

To preset pay cable TV channels

4 **Press AUTO PGM.**



"AUTO PROGRAM" is displayed on the screen and receivable channels (other than the channels already preset) will be preset in numerical sequence. The channels previously preset remain in the unit's memory.
When no more channels can be found, the programming stops and the lowest numbered channel is displayed.

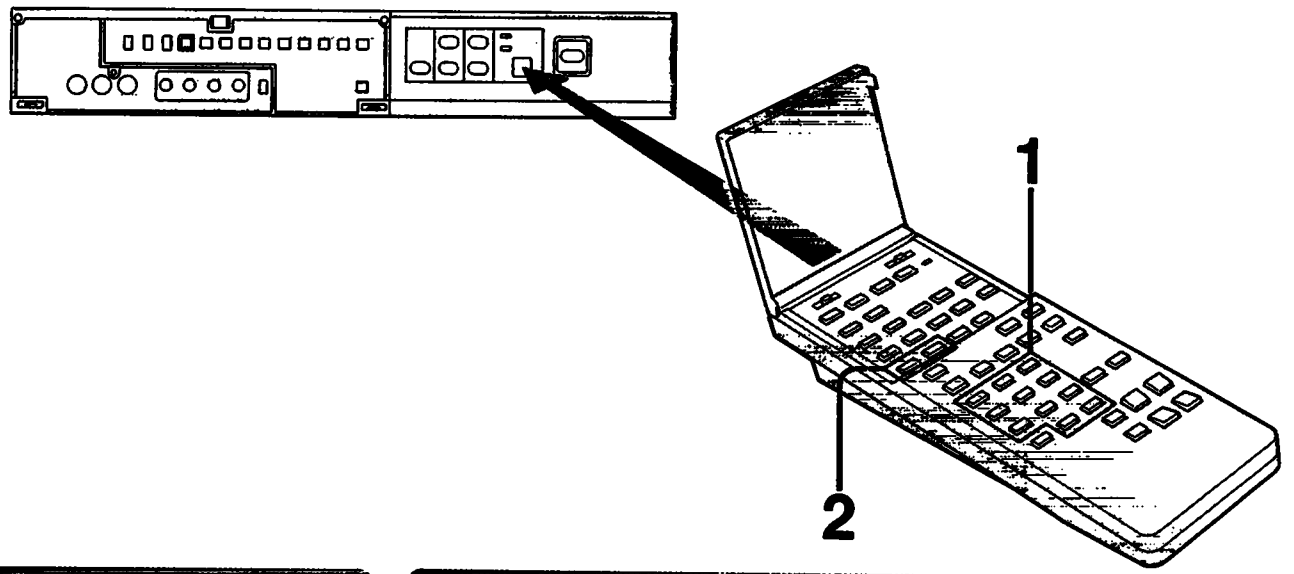
Receivable channels of this projector are:
VHF: 2-13
UHF: 14-69
Cable: 1-125

To check preset channels
Press CH +/−.

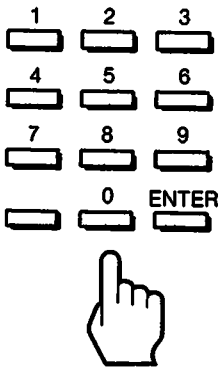
To add the channels that could not be preset with automatic programming because their signal strength was too weak, **or to erase unnecessary channels,** follow the steps in "To preset only the desired channels" on the next page.

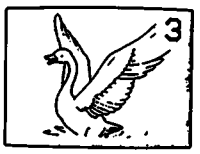
If the "VIDEO 1", "VIDEO 2", VIDEO 3" or "EXT-A" indication is displayed on the screen
Press TV or TV/VIDEO so that a channel number appears.

To preset only the desired channels



1 **Press the channel number button(s) and then ENTER to select the channel to be added or erased.**

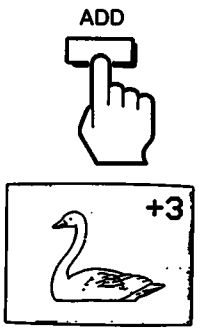




2

To add channels

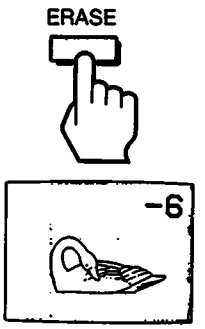
Press ADD.



A "+" appears for a moment. This channel has now been added to the channel scan memory.

To erase channels

Press ERASE.



A "−" appears for a moment. This channel has now been erased from the channel scan memory.

Repeat steps 1 and 2 for other channels to be added or erased.

When a VHF or UHF channel is erased
The cable TV channel with the same number is also erased and vice versa.

Cable TV channel chart*
Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to this chart.

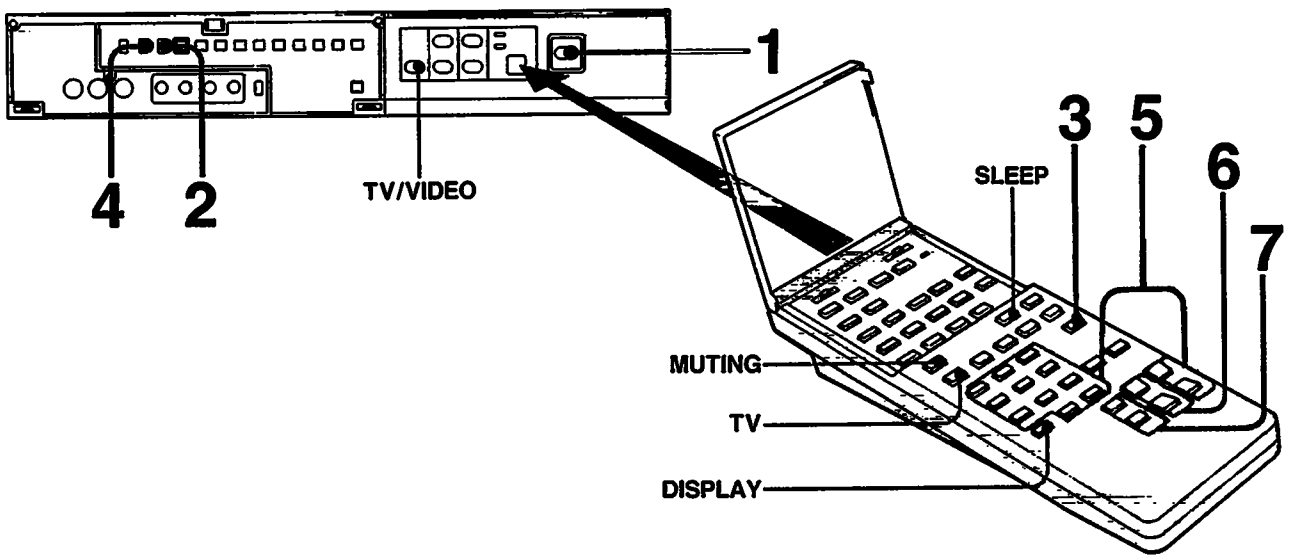
Number on this set	1	5	6	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Corresponding CATV channel	A-8	A-7	A-6	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q

31	32	33	34	35	36	37	38	39	.....	93	94	95	96	97	98	99	100	101	102	.....	123	124	125
R	S	T	U	V	W	W+1	W+2	W+3	.....	W+57	W+58	A-5	A-4	A-3	A-2	A-1	W+59	W+60	W+61	.....	W+82	W+83	W+84

Check with your local cable TV company for more complete information on the available channels.

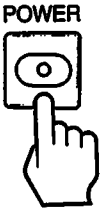
*The designation of the cable TV channels conforms to the EIA/NCTA recommendation.

Viewing TV Programs



1 **Turn on the projector.**

POWER



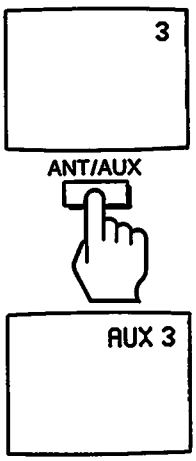
2 **Set CABLE to the appropriate position.**

CABLE
ON
OFF

To preset cable TV channels

To preset VHF or UHF channels

3 **Press ANT/AUX according to the channel to be viewed.**



To view VHF, UHF or regular cable TV channels

To view pay cable TV channels

If the "VIDEO 1", "VIDEO 2", "VIDEO 3" or "EXT-A" indication is displayed on the screen
Press TV or TV/VIDEO so that a channel number appears.

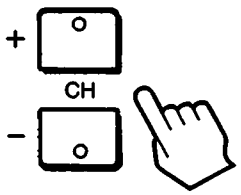
To mute the sound
Press MUTING. The "MUTING" indication will appear on the screen. To restore the sound, press MUTING again or VOL+/−.

To keep the channel display on the screen
Press DISPLAY.

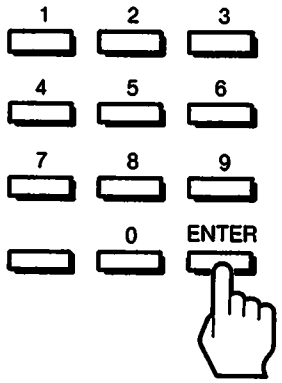
4 **Set AUTO STEREO to ON.**

5 **Select a channel** in one of the following two ways:

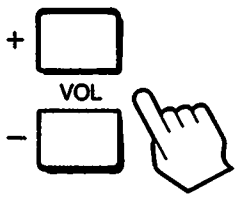
To scan the preset channels in numerical sequence, press CH+/–.



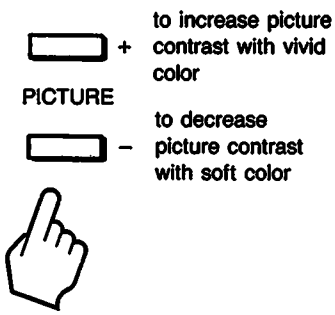
To select a channel directly, press the channel number button(s) and then ENTER. For example, to select channel 10, press 1, 0 and ENTER.



6 **Press VOL+ or – to adjust the volume.**



7 **Press PICTURE + or – to adjust picture.**

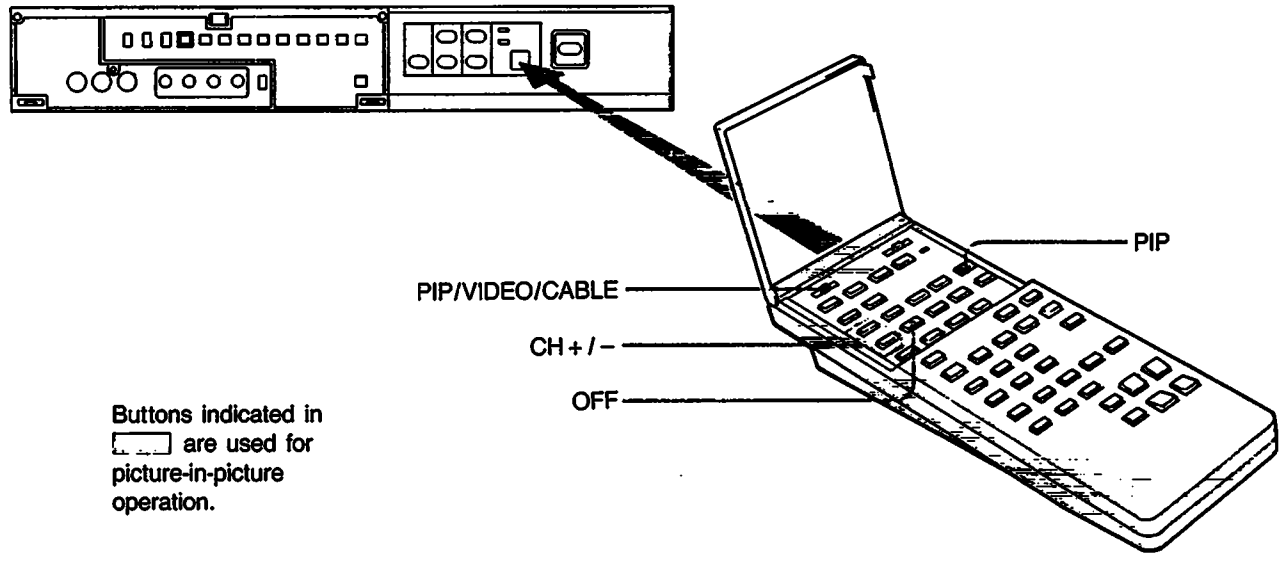


To have the projector turn off automatically after about 1 hour
Press SLEEP. The "SLEEP" indication will appear on the screen for a few seconds and the SLEEP lamp on the unit will remain lit until the unit is turned off.

To cancel the SLEEP timer, press SLEEP again so that the SLEEP lamp goes out, or turn off the projector.

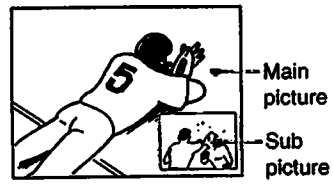
To turn off the unit
Press POWER on the projector or the Remote Commander.

Enjoying the Picture-in-Picture Feature



Buttons indicated in [ ] are used for picture-in-picture operation.

Besides the main picture, another TV channel or a video source can be displayed simultaneously as a sub picture.



To scan TV programs of a sub picture, press CH + / – in the picture-in-picture section on the Remote Commander or CHANNEL + / – on the projector.

To make the sub picture disappear, press OFF.

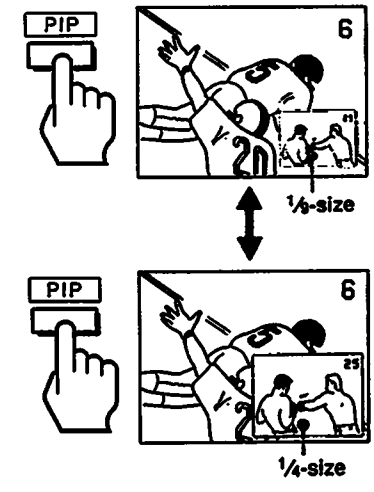
Before starting the picture-in-picture operation

Set PIP/VIDEO/CABLE to PIP.

If the selector is set to VIDEO or CABLE, the picture-in-picture function cannot be activated.

To display a sub picture

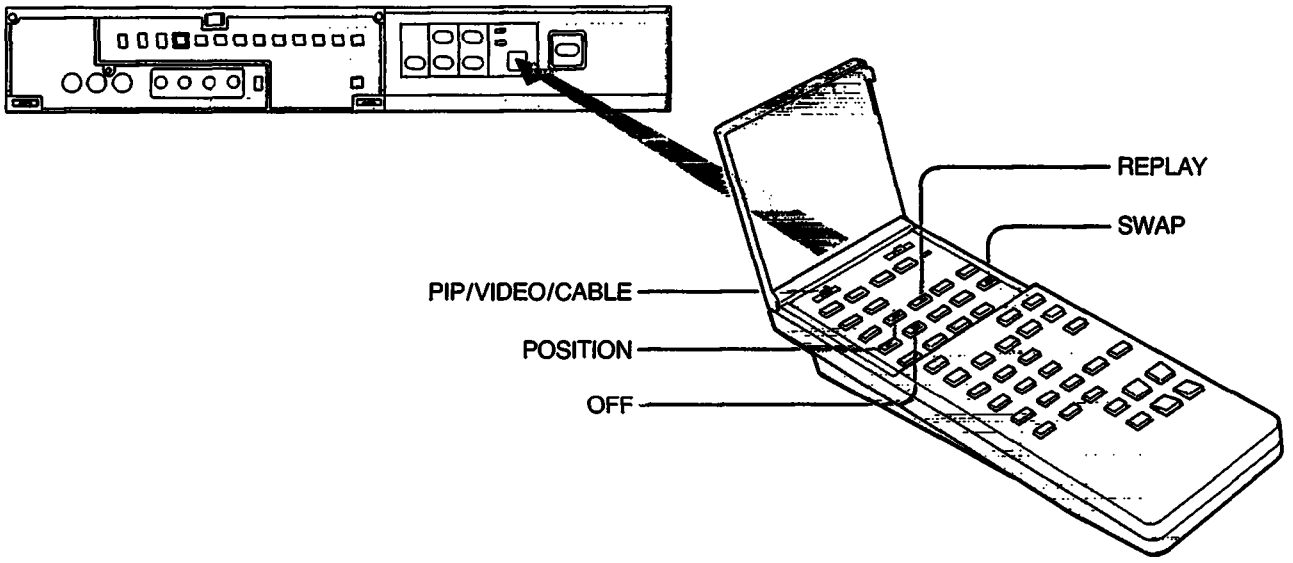
Press PIP.



Each time PIP is pressed, a 1/9-size or 1/4-size sub picture will appear, alternately.

- The channels being received through the AUX terminal cannot be displayed as a sub picture except as a split picture. (See page 14.)
- The sound of a sub picture cannot be heard.
- To change the video source of a sub picture, change a main picture to the desired video source and then press SWAP. (See page 13.)

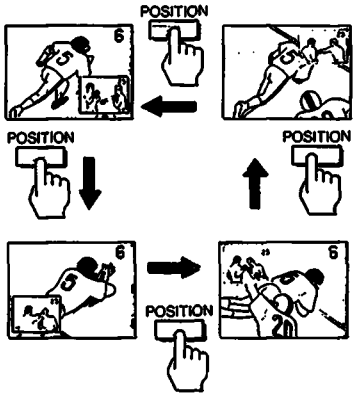
To adjust a sub picture
Adjust the PICTURE buttons and A/V WINDOW buttons for picture and sound adjustment. They operate on a main and a sub picture simultaneously except that sharpness is not adjustable for a sub picture.



To change the position of the sub picture

1 Display a sub picture.

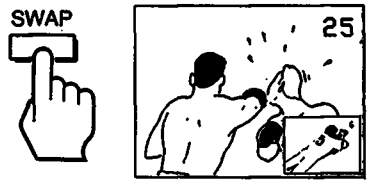
2 Press POSITION.



To swap the main and the sub picture

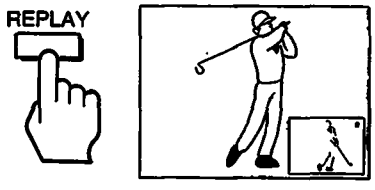
1 Display a sub picture.

2 Press SWAP.



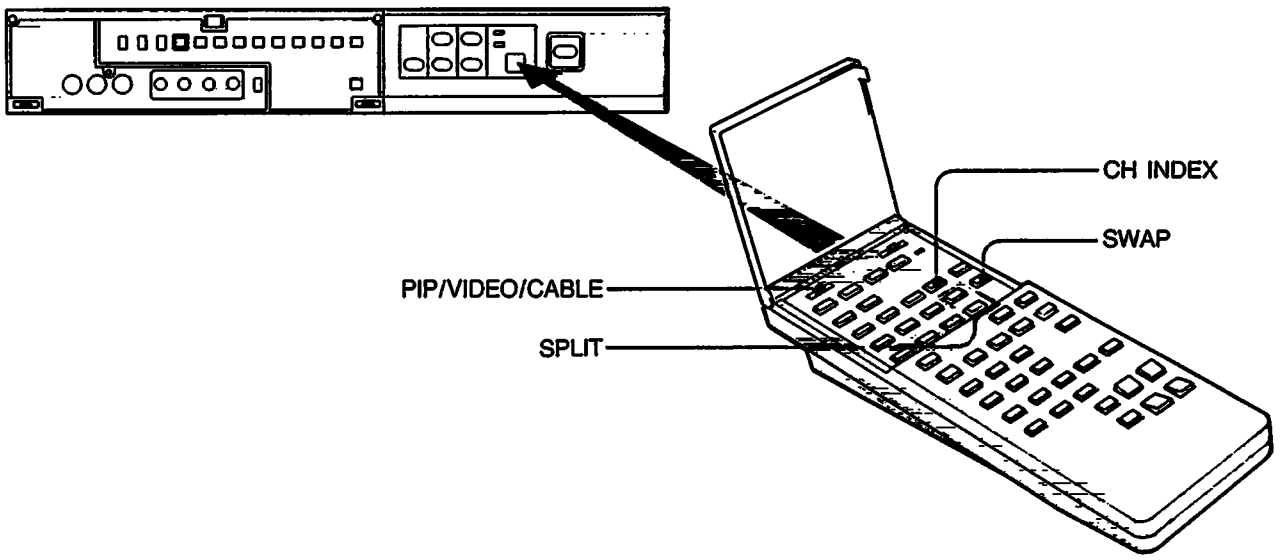
To replay the main picture displayed 2 seconds earlier

Press REPLAY.



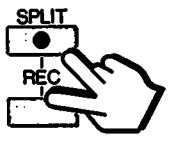
To make the replay picture disappear, press OFF.

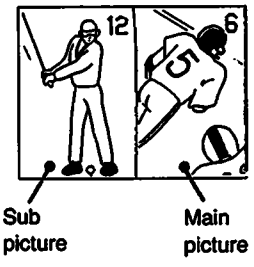
Note
The replay picture is always in 1/9 size.



To split the screen with the main and the sub picture

Press SPLIT.
Be sure to press these two buttons simultaneously.

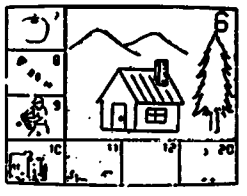




Only the sound of the main picture (right screen) is heard.

To display 7 different sub pictures simultaneously (TV channels only)

Press CH INDEX.



Seven preset channels appear in numerical sequence as sub pictures.
Each time CH INDEX is pressed, next 7 preset channels will appear.

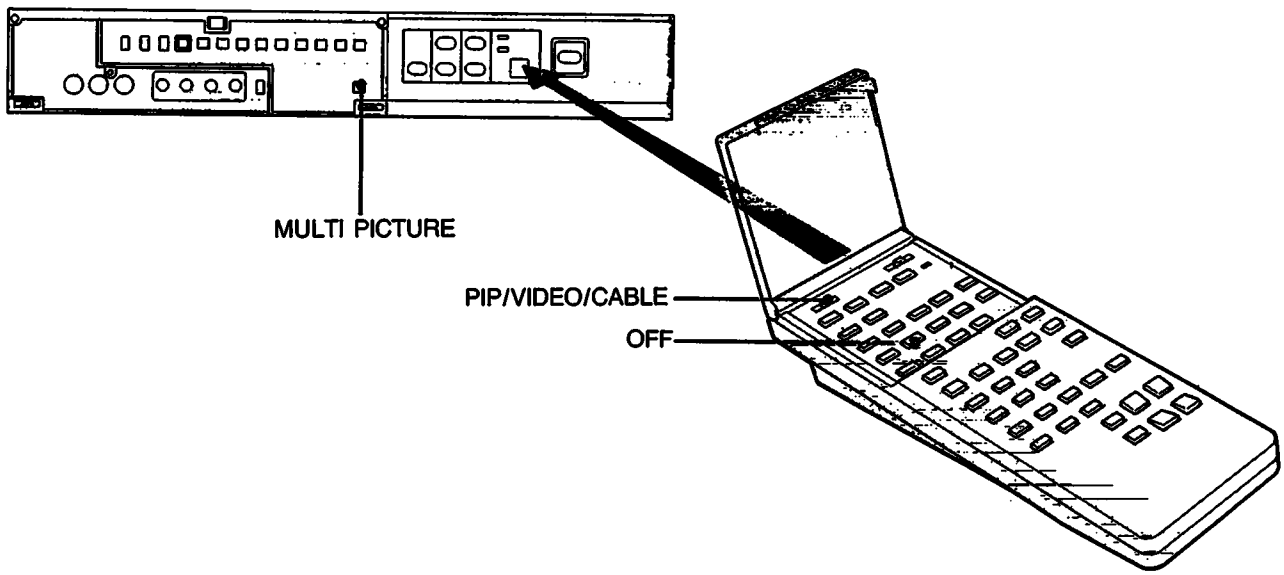
To cancel CH INDEX, press OFF.

To swap the main and the sub picture in the split screen, press SWAP.

When using the split-screen feature, vertical lines may appear to you to be elongated.

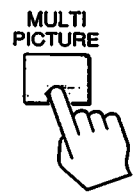
In the split screen, picture may slightly move vertically.

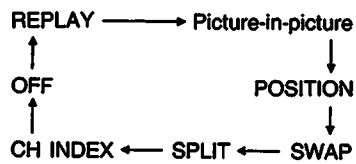
When using the channel-index feature, part of the main picture is hidden by the sub pictures.



To demonstrate all the picture-in-picture features one by one

Press MULTI PICTURE on the projector.
Each time the button is pressed, the features will be demonstrated as follows:



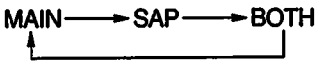


To stop the demonstration
Press OFF.

Listening to Multichannel TV Sound (MTS) Broadcasts

To receive a stereo program
Normally set the AUTO STEREO selector to ON. In this position, the STEREO lamp on the control panel will light up whenever a stereo broadcast is received.
To listen to the stereo sound, select the MAIN mode with the MTS button so that the on-screen MAIN indication appears. The stereo sound will be heard from the left and right speakers.

Every press on the MTS button changes the indication as follows:



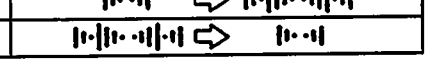
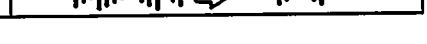
To listen to a SAP (Second Audio Program) broadcast
Press the MTS button until the "SAP" indication is displayed. The SAP sound will be heard from both speakers.

To listen to both MAIN and SAP broadcasts
Press the MTS button until the "BOTH" indication is displayed. The MAIN and SAP sounds will come out from the left and right speakers respectively.
The MAIN sound becomes monaural (mixed) even if it is a stereo broadcast, as the sound comes only from the left speaker.

Notes
- The selected mode will be retained even after the power has once been turned off.
- There may be cases of stereo broadcasts where excessive "noise" will be heard due to a weak incoming signal. In this case, press the AUTO STEREO selector to OFF (monaural mode), and the noise should be eliminated.
- When the SAP or BOTH mode is selected and there is no SAP broadcast, no sound is heard from the speaker (in SAP mode).
- The SAP broadcast will always be transmitted with the MAIN broadcast.

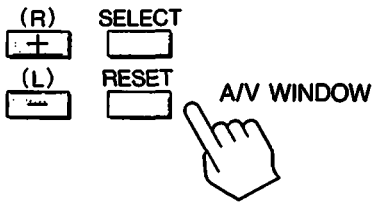
Enjoying MATRIX Surround Effect

To enjoy sound reproduction with the atmosphere of a movie theater or a concert hall, press the SURROUND button.
Press the button again to deactivate surround.

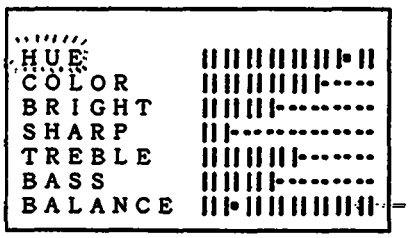
SURROUND	On-screen indication
Turned ON	
Turned OFF	

Additional Picture and Sound Adjustment

The following items can be adjusted with A/V WINDOW buttons by observing the bar display on the screen.



1 Press SELECT to display the items of the picture and sound adjustment. The item to be adjustable will blink.



= Segmented color bar indicating the level

2 Press SELECT continuously until the item you desire to adjust blinks.

3 Press +(R)/−(L) to adjust the selected item. Only the selected item and the bar will be displayed below on the screen.

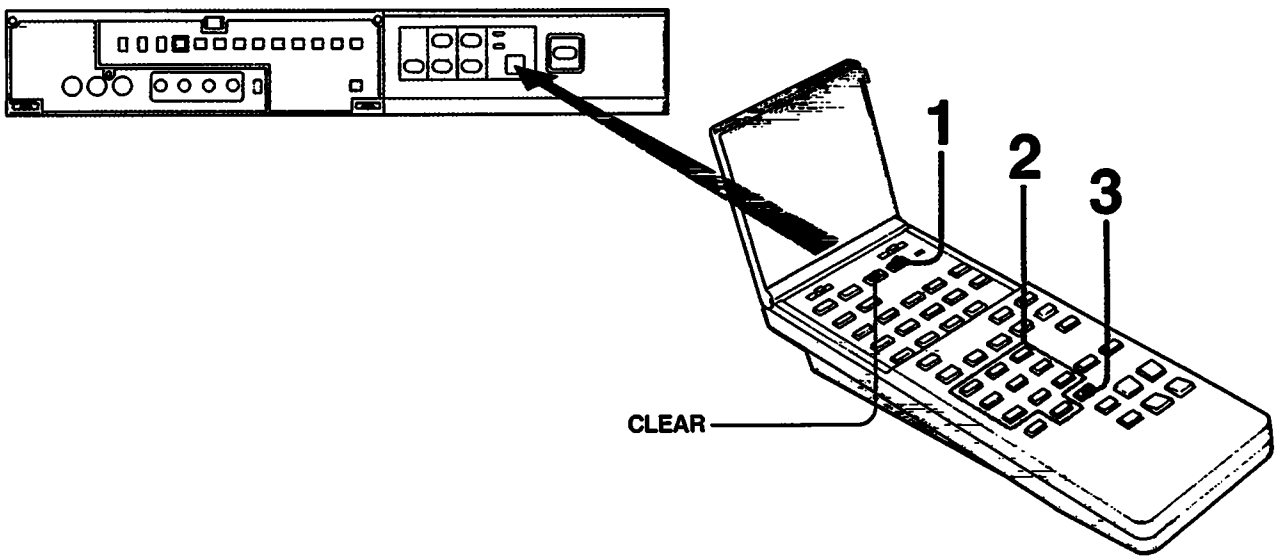
	Selected item	− (L) button	+ (R) button
Picture adjustment	HUE	Skin tones become purplish	Skin tones become greenish
	COLOR	For less color intensity	For more color intensity
	BRIGHT	For less brightness	For more brightness
	SHARP	For less sharpness	For more sharpness
Sound adjustment	TREBLE	To decrease treble response	To increase treble response
	BASS	To decrease bass response	To increase bass response
	BALANCE	To emphasize the left speaker's volume	To emphasize the right speaker's volume

In the picture-in-picture function, the SHARP control is not operative for a sub picture.

All picture and sound items are adjustable for TV and each video source.

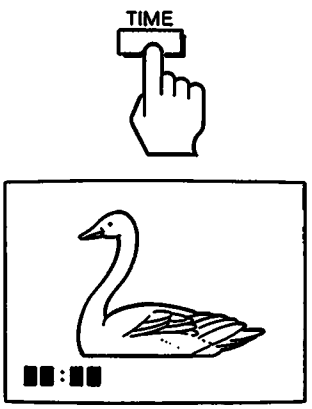
To reset all the items to the factory preset levels, press RESET. The "RESET" indication will appear for a few seconds.

Setting the Clock

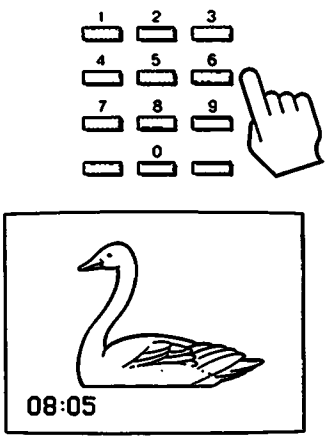


Example: To set the clock to 8:05 p.m.

1 **Press TIME.**

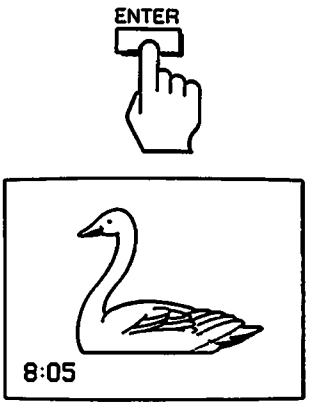


2 **Press 0, 8, 0, 5 (0 necessary).**



If you have made a mistake, press CLEAR within 3 seconds and repeat this step.

3 **Press ENTER.**



The numbers will blink to indicate that the clock has been set. (The 0 in front will disappear.)

- The internal clock of this projector is 12-hour cycle. If the 24-hour cycle number is displayed, it will be cleared when ENTER is pressed.
- Clock setting will be erased from the unit's memory if the unit is unplugged, or if a power failure occurs.

To make the clock indication disappear, press TIME.

To reset the clock, make the clock indication disappear and then make it appear again. Press CLEAR within 3 seconds and follow the steps above from 2.

Using the Programmable Remote Commander

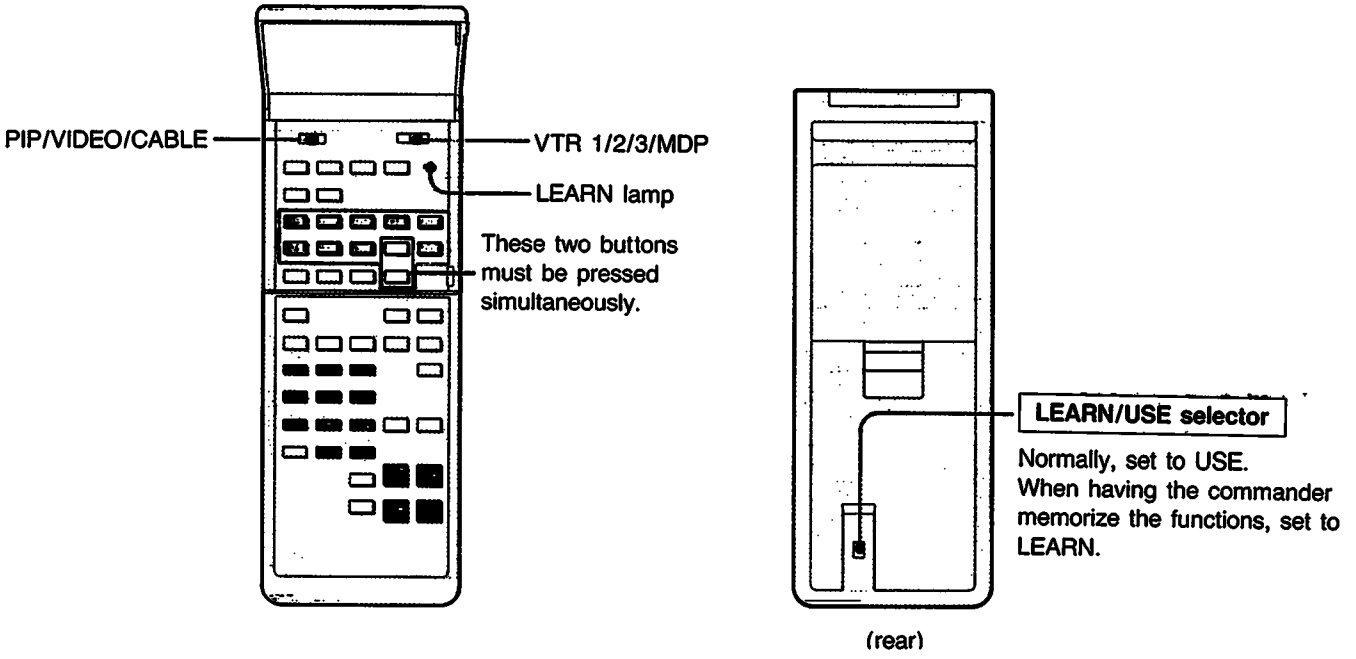
— Operating Other Equipment with Supplied Remote Commander —

The supplied RM-766 Remote Commander allows you to operate other Sony video equipment having an infrared remote control detector. Furthermore, it can "read" and "store" the functions of another Remote Commander having an infrared beam transmitter, not only those made by Sony but also those of other manufactures as well. Thanks to this "learning" function, you can operate your home audio and video equipment with only one remote commander.

Buttons Used for Learning Function

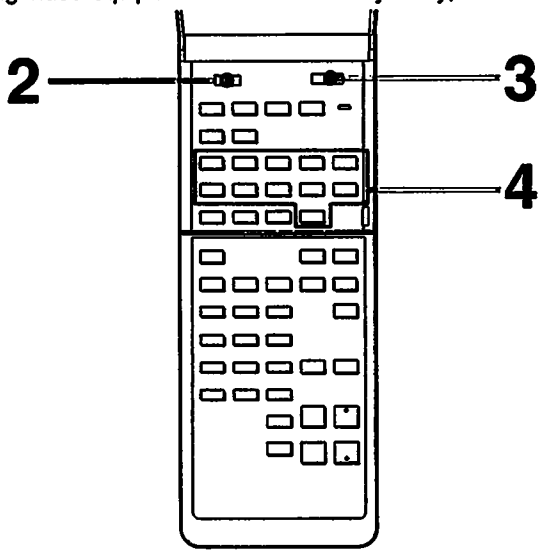
Programmable area

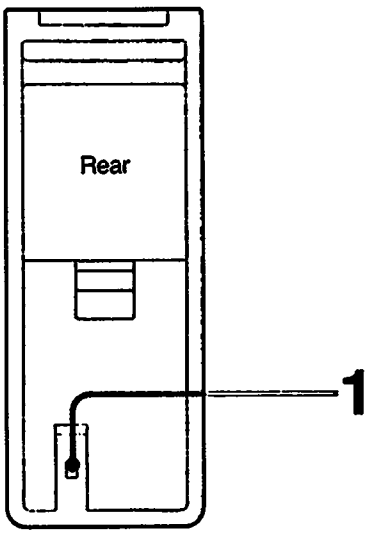
The buttons which have learning functions are indicated in ■.



Operating Sony Video Equipment

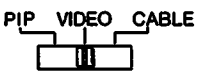
The supplied Remote Commander allows you to operate Sony video cassette recorders (including Beta, 8 mm, VHS), and video disc player (including multi disc player).
For operating video equipment manufactured by Sony, "learning" is unnecessary.



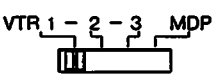


1 **Set USE/LEARN on the rear to USE.**

2 **Set PIP/VIDEO/CABLE to VIDEO.**



3 **Set the VTR 1/2/3/MDP selector according to desired video equipment.**



Beta, ED Beta VCR	VTR 1
8 mm VCR	VTR 2
VHS VCR	VTR 3
Video disc player	MDP

4 **Use the buttons in this area to operate video equipment.**

Operating a Video Cassette Recorder

To start playback	Press ▶.
To start recording	Press ● simultaneously.
To stop playback/recording the tape	Press ■.
To advance the tape rapidly	Press ▶▶.
To rewind the tape	Press ◀◀.
To freeze a picture	Press ❚❚. To resume normal playback, press it again.
To view the picture at a fast speed to find a particular scene	Keep pressing ▶▶ or ◀◀ during playback. To resume normal playback, release the button.

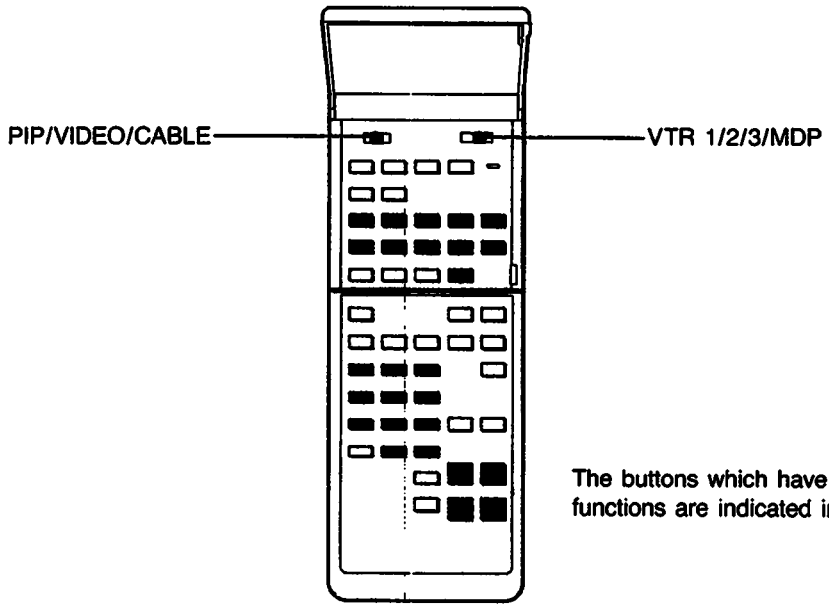
Operating a Video Disc Player

To start playback	Press ▶.
To stop playback	Press ■.
To freeze a picture	Press ❚❚. To resume normal playback, press it again. *This function is effective only for CAV (standard-play disc). With CLV (extended-play disc), the unit will go into the standby mode if ❚❚ is pressed.
To view the picture at a fast speed to find a particular scene	Keep pressing ▶▶ or ◀◀ during playback. To resume normal playback, release the button.

*If the equipment does not have a certain function, the corresponding button on this Remote Commander is not effective.

Operating Audio and Video Equipment of Other Manufacturers, or Sony Audio Equipment

Within the programmable area, any button can memorize the function of the Remote Commander supplied with other manufacturer's equipment or Sony audio equipment.
Up to 5 patterns of functions can be memorized on a button.



The buttons which have learning functions are indicated in ■.

Up to 5 patterns of functions can be memorized on a button by setting the selectors as follows:

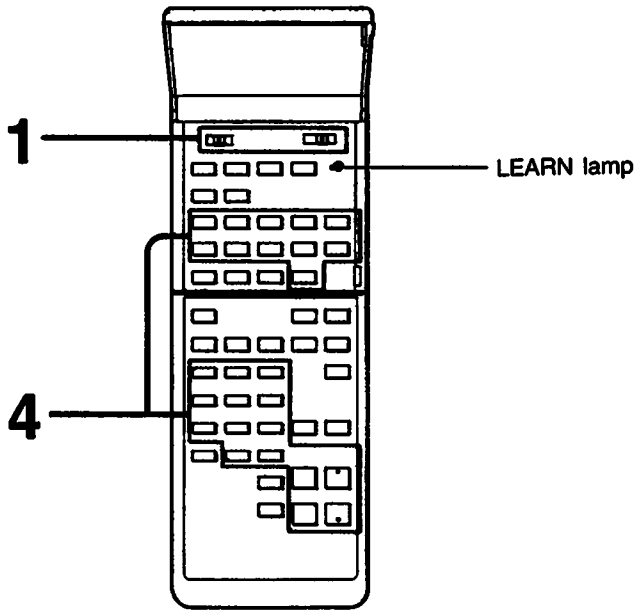
Selector pattern

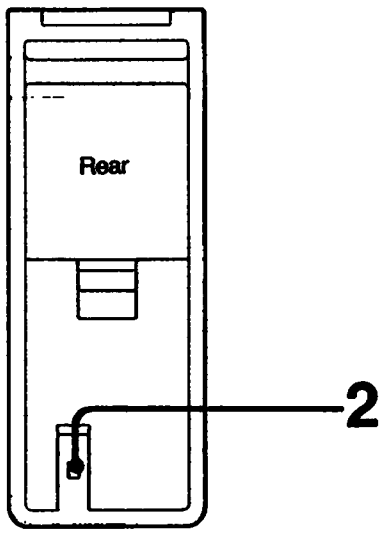
Pattern 1	PIP VIDEO CABLE / VTR 1 - 2 - 3 MDP
Pattern 2	PIP VIDEO CABLE / VTR 1 - 2 - 3 MDP
Pattern 3	PIP VIDEO CABLE / VTR 1 - 2 - 3 MDP
Pattern 4	PIP VIDEO CABLE / VTR 1 - 2 - 3 MDP
Pattern 5	PIP VIDEO CABLE

(For Patterns 1—4, setting both selectors is necessary.)

For your convenience:
- Set the selector to the position which is not used for your Sony video equipment.
- Memorize the new function on the button which has the same kind of function.
  (e.g. Stop function → ■ button, Playback function → ▶ button.)

How to Use the Learning Function

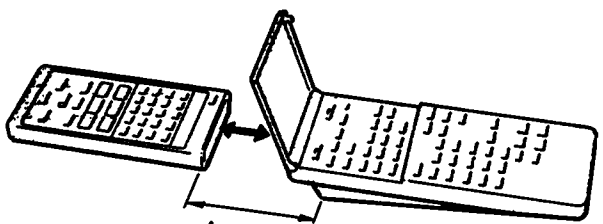




1 **Set PIP/VIDEO/CABLE and VTR1/2/3/MDP to the appropriate positions.**

2 **Set USE/LEARN on the rear to LEARN.**

3 **Position this Remote Commander and the other remote commander head to head.**



Approx.
2 inches
(5 cm)

4 **Momentarily press a button of this Commander for which a function is to be memorized.**
LEARN lamp lights up (beep).
Now it's ready for learning.

Note
If you press a button which is not programmable or set PIP/VIDEO/CABLE by mistake, the Commander beeps repeatedly.

5 **Keep pressing the function button of the other Remote Commander until the LEARN lamp goes off**
A long beep is also heard which confirms that the learning was successfully completed.

To continue learning other functions
Repeat above steps 4 and 5.

After learning is finished
Set USE/LEARN to USE.

For accurate learning
Do not move the Commanders during the learning process.

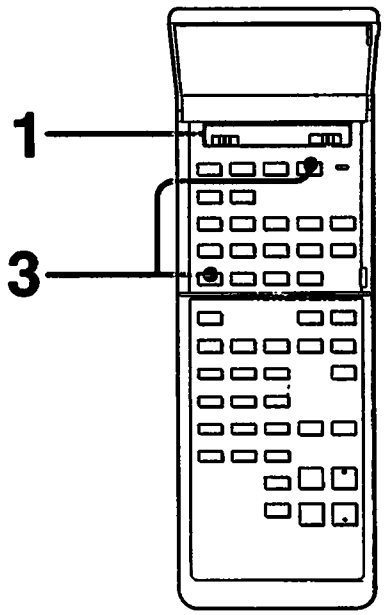
Caution
When replacing the batteries, do it within approx. 30 minutes. Otherwise, the memorized function may be erased.

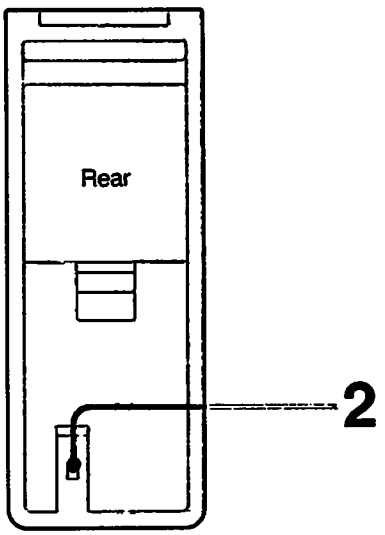
Notes
- The Commander beeps repeatedly if there is inappropriate operation. Try again from step 4.
- Be sure to confirm that the functions have been memorized as a few Commanders of other manufacturers are not storable on this Commander.
- Do not use the learning function for equipment other than video and audio.
- When operating equipment with learned functions, the same selector pattern should be selected as when the functions were memorized. (See page 21.)
- When a new function is assigned to a button, the previous function is cleared automatically.
- When the memories are full, the LEARN lamp lights steadily if you try to memorize a new function. In such a case, set LEARN/USE selector to USE to turn the lamp off, then clear the unnecessary functions. (See pages 24 and 25.)

The learning function will not work in the following cases:
- There is a fluorescent lamp or equipment which emit infrared energy.
  Move the Commanders away from such infrared sources.
- The batteries are exhauseted.
  Replace all the batteries with new ones.
- There is an obstacle between the Commanders, or the Commanders are not positioned head to head and exactly aligned.
  Position the Commanders properly.

Clearing Memorized Functions

—Clearing memorized functions under a particular selector pattern—

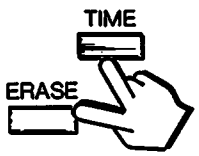




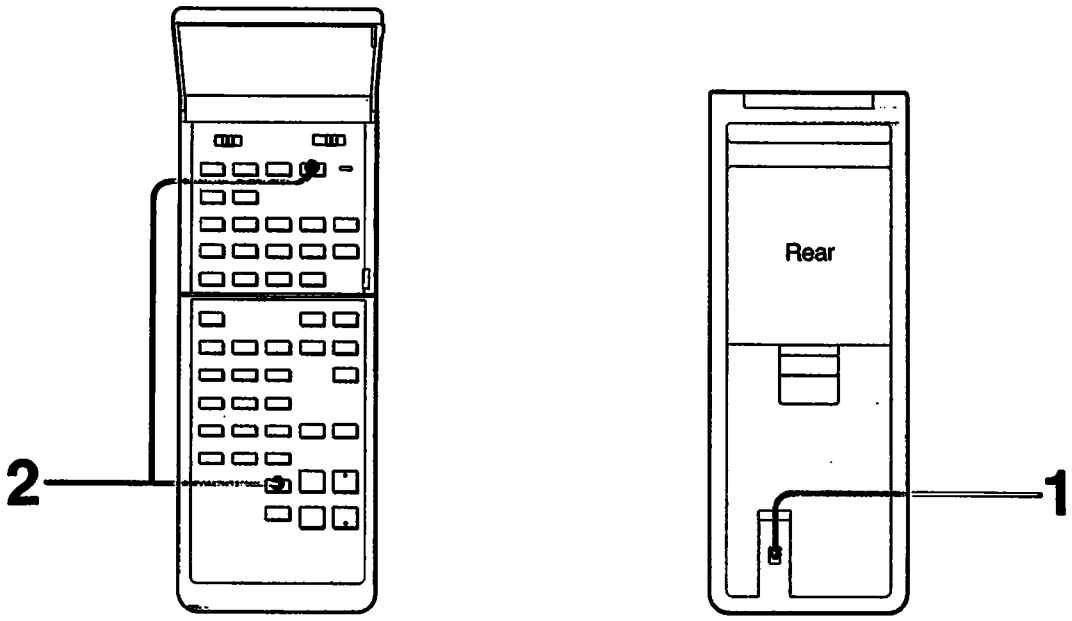
1 **Set PIP/VIDEO/CABLE and VTR1/2/3/MDP to the pattern for the functions you want to clear. (See page 21.)**

2 **Set LEARN/USE on the rear to LEARN.**

3 **While keeping TIME pressed, press ERASE.**
LEARN lamp lights up and a long beep is also heard. Now, the memorized functions under this selector pattern setting are cleared.

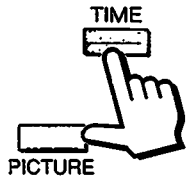


Clearing All the Memorized Functions



1 **Set LEARN/USE to LEARN.**

2 **While keeping TIME pressed, press PICTURE +.**
LEARN lamp lights up and a long beep is also heard. Now, all the memorized functions are cleared.



Notes

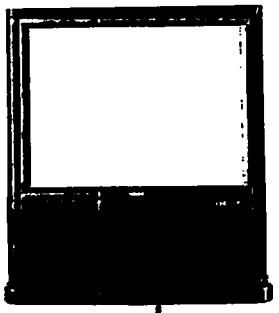
- If clearing function did not work properly, the Commander will beep repeatedly. Try again.
- Even if the memorized functions are cleared, the buttons maintain their factory-set memory.

Application with Other Optional Equipment

This unit is equipped with various input/output jacks and terminals for your desired equipment to be connected.

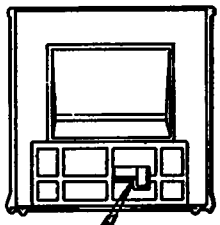
For further details, refer to the page number next to each item.

Front



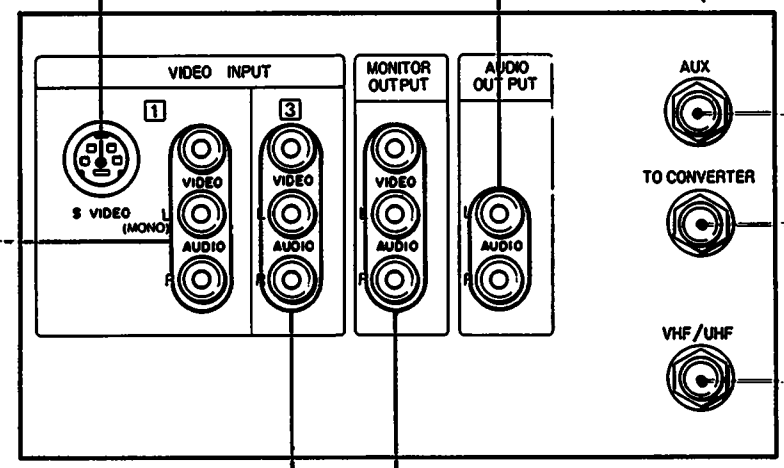
VIDEO 2 IN (input) Jacks (phono type) 30 32
Connect to a VCR or microcomputer.

Rear



VIDEO 1 S VIDEO INPUT jack
(4-pin mini DIN type) 29
Connect to the VCR equipped with the S video output jack. When this jack is connected, even if the "VIDEO" jack (phono type) of the VIDEO 1 INPUT is connected, the picture to be monitored is switched automatically to the signal from this jack.

AUDIO OUTPUT jacks (phono type) 31
Connect to the audio input jacks of an audio equipment. Either the audio signal of the TV or VCR selected by the TV/VIDEO button is supplied. The volume of the equipment connected to these jacks can be adjusted by VOLUME (or VOL) buttons on this unit (or Commander).



AUX (auxiliary) terminal (F type) 6

TO CONVERTER terminal (F type) 6

VHF/UHF terminal (F type) 6

VIDEO 1 INPUT jacks (phono type) 28 29
Connect to a VCR*, video disc player, etc.

VIDEO 3 INPUT jacks (phono type) 28 30
Connect to a VCR, video disc player or audio equipment, etc.

MONITOR OUTPUT jacks (phono type) 30
Connect to a VCR or color monitor. Either the TV or VCR signal selected by the TV/VIDEO button or the mode select buttons is supplied.

* You will achieve better picture and sound quality than by connecting the VCR only to the antenna terminals.

Optional Audio/Video Connecting Cables

The optional connecting cables to be used for connecting other equipment depend upon what type of audio and video jacks the equipment you desire to connect has.

Notes on connection

- Before connecting, make sure to turn off the power of all equipment.
- The plugs should be fully inserted into the jacks. A loose connection may cause hum and noise.
- Match the color when connecting the plugs to the jacks.

Cables to be connected to the VIDEO 1, 2 and 3 INPUT jacks

The type of audio and video jacks of the equipment to be connected		Connecting cable to be used
Video (phono-type)	Audio (L, R) (phono-type)	VMC-820S
Video (phono-type)	Audio (mini-type)	VMC-2MP3
Video (phono-type)	Audio (phono-type)	VMC-920MS

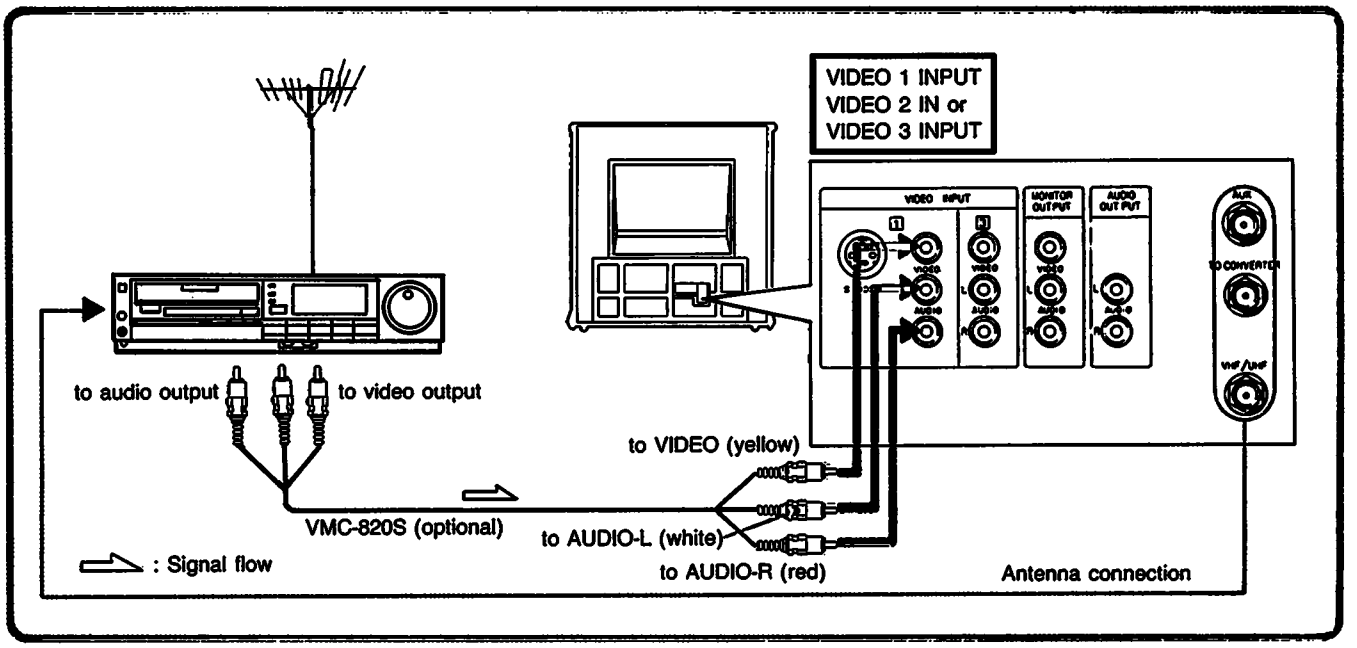
Cable to be connected to the S VIDEO jack

S VIDEO (4-pin mini DIN type)	YC-15V/30V

VCR Connection

Keep the VCR away from the projector, if the display or sound is distorted.

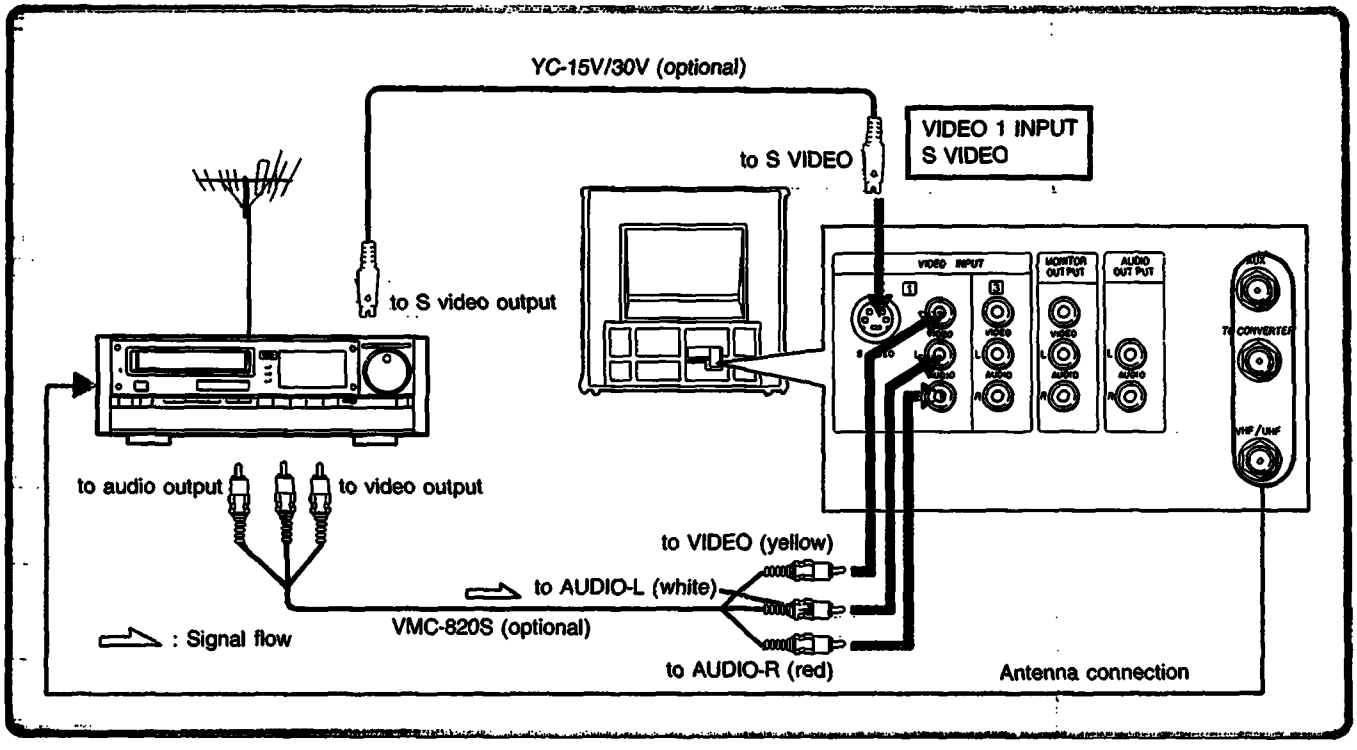
Connecting VCRs without the S Video Output Jack



With this connection, you will be able to...
- View the playback of tapes
- Record TV programs
- Record a TV program while viewing another

Caution
Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

Connecting VCRs Equipped with the S Video Output Jack

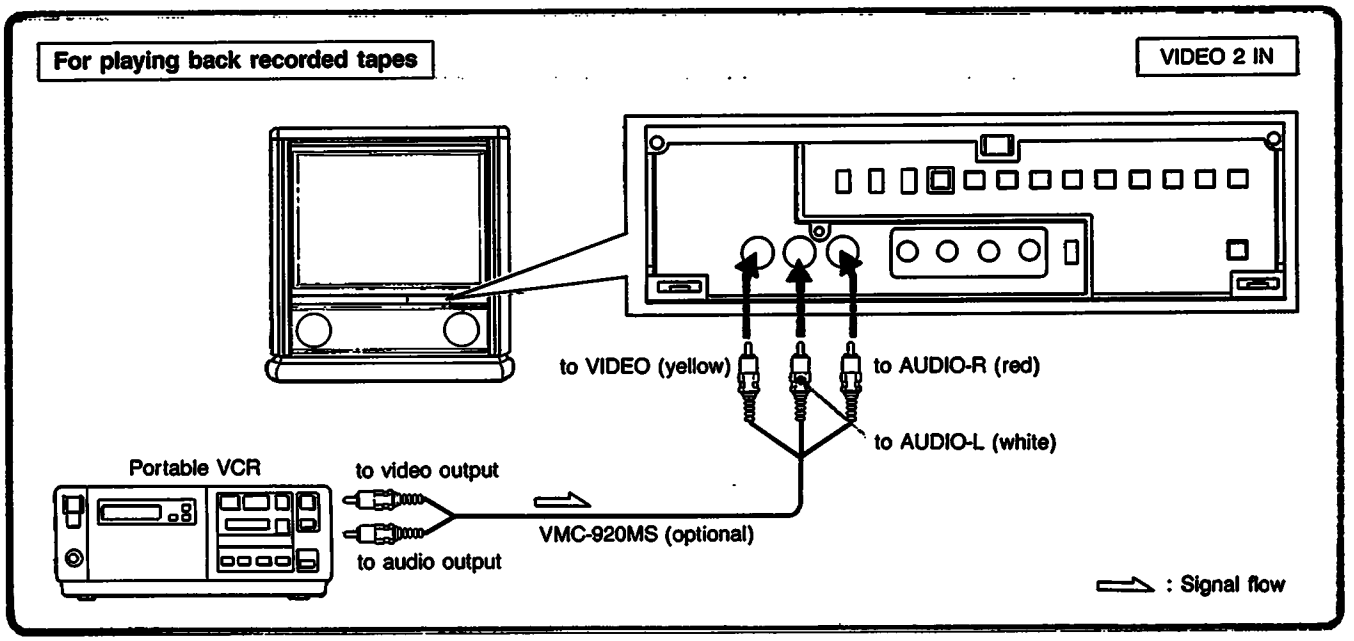


With this connection, you will be able to ....
- View the playback of tapes
- Record TV programs
- Record a TV program while viewing another

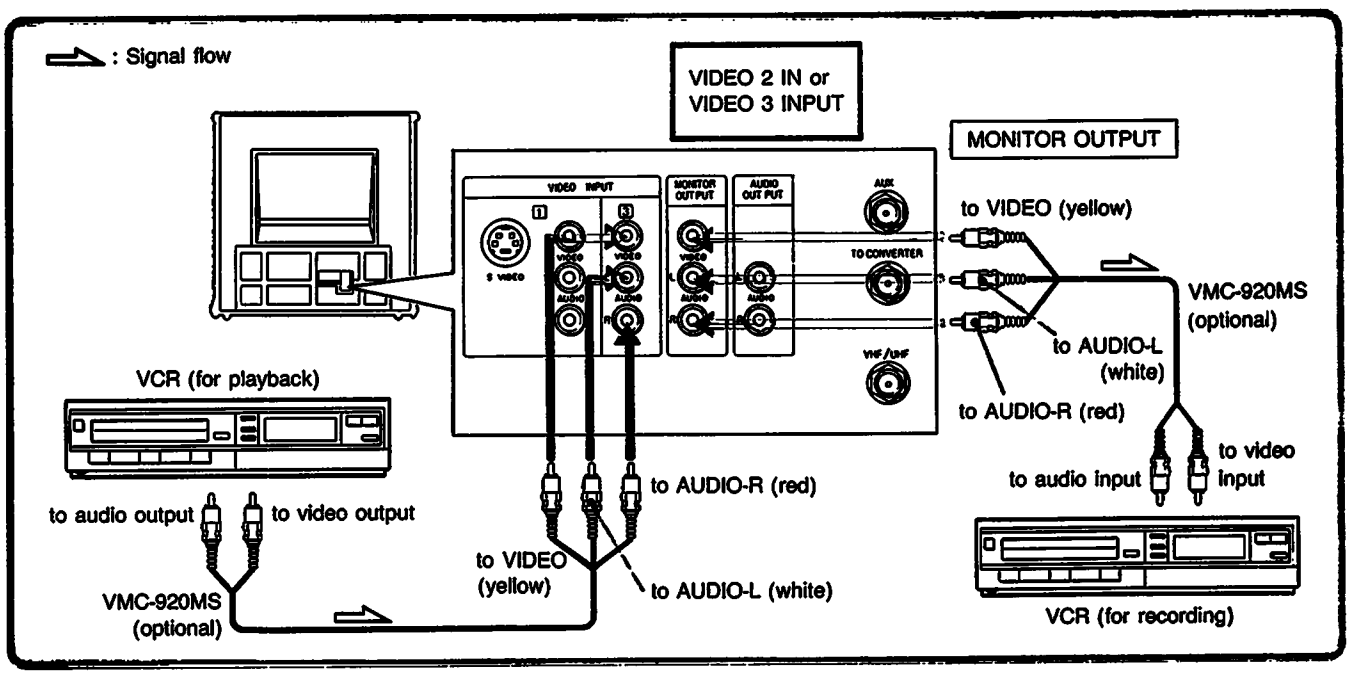
About S Video Input
Video input and output signals may be separated into Y (luminance or brightness) and C (chroma or color) signals. Usually these two signals are combined in a VCR and sent as one signal to a projector. Separation of the Y and C signals prevents them from interference with one another, thereby improving picture (especially in color) quality.
This unit is equipped with a S video input jack through which these separated signals can be input directly.

Note
The video signals received through the S VIDEO INPUT jack are not displayed as a sub picture in picture-in-picture features. When you use the features, the same signals should be input through the VIDEO jack of the VIDEO INPUT 1 jacks.

Connecting Portable VCRs (that are not equipped with/connected to a TV tuner)



Connecting Two VCRs for Tape Editing



Operation

1 Press the desired mode select button or press the TV/VIDEO button so that the desired video source display appears. The VIDEO lamp will light up.

2 Set the playback VCR to the playback mode and set the recording VCR to the recording mode.

Note

The MONITOR OUTPUT jacks do not output the signals from the VCR connected to the VIDEO 1 INPUT jacks.

To edit the tape, connect the playback VCR to the VIDEO 2 or VIDEO 3 INPUT jacks.

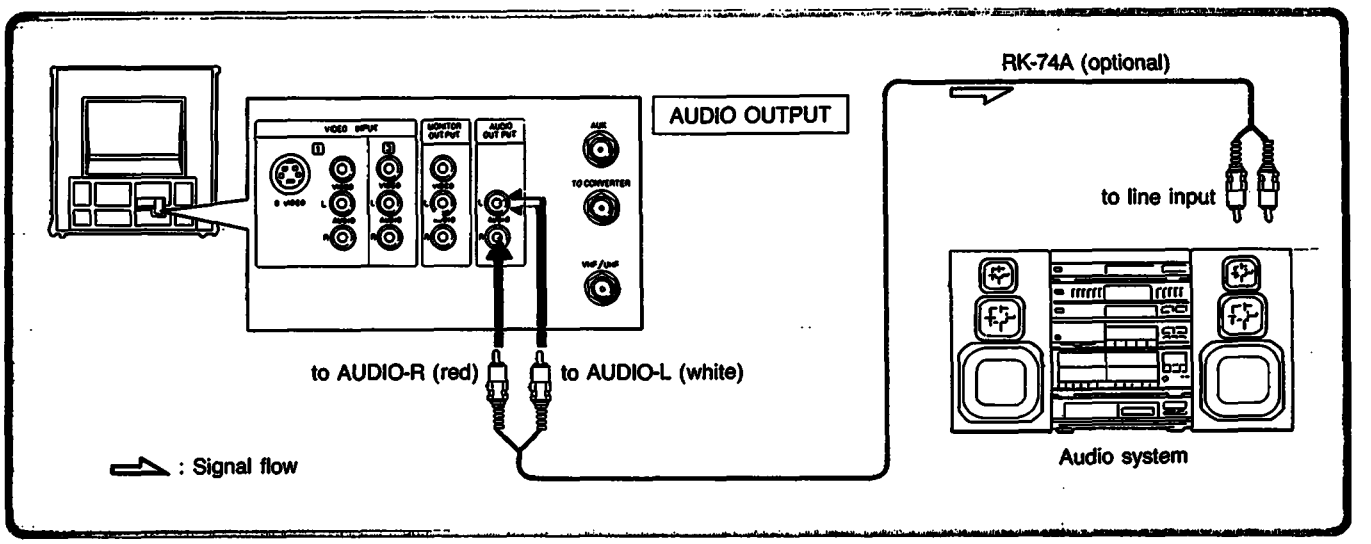
Every time you press the TV/VIDEO button, the display will change as follows:

VIDEO 1 → VIDEO 2 → VIDEO 3 → EXT-A → TV channel

The channel number buttons on the Remote Commander or the CHANNEL scan buttons will not function while the VIDEO lamp is lit.

Audio System Connection

To monitor TV sound with a stereo system

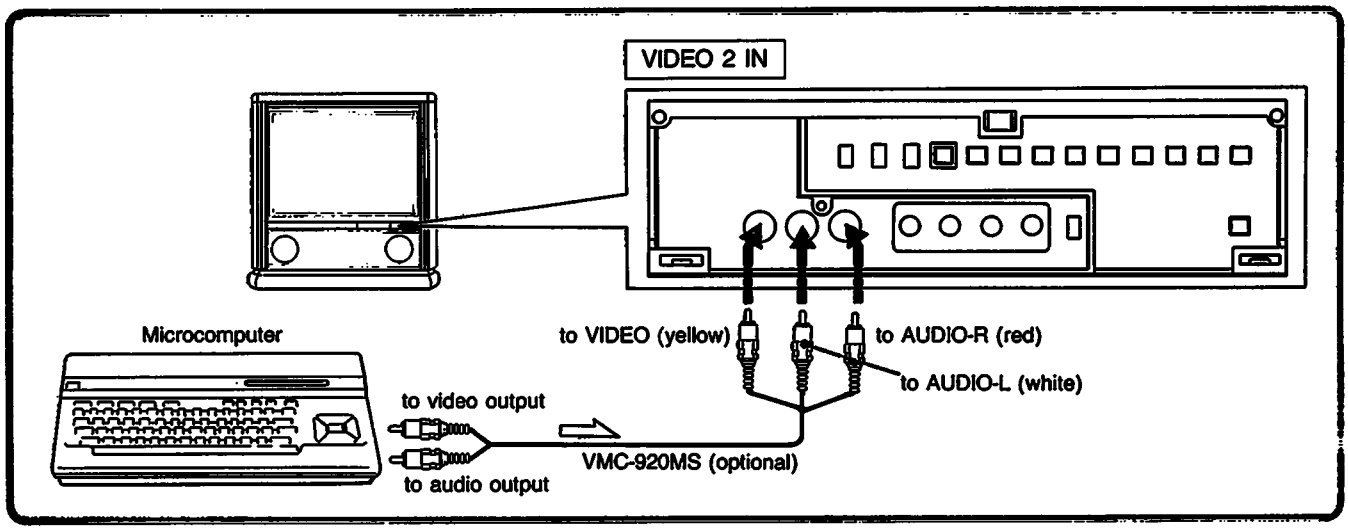


With this connection, you will be able to adjust sound volume from the stereo speakers with the projector or Remote Commander.
To monitor TV sound only from a stereo system, set the SPEAKER selector on the front panel to OFF.
When SPEAKER selector is set to ON, adjust the volume from the stereo with stereo amplifier.

Note

When the NORM/TEST selector of the projector is set to TEST, the AUDIO OUTPUT jacks do not output the TV sound.

Microcomputer Connection

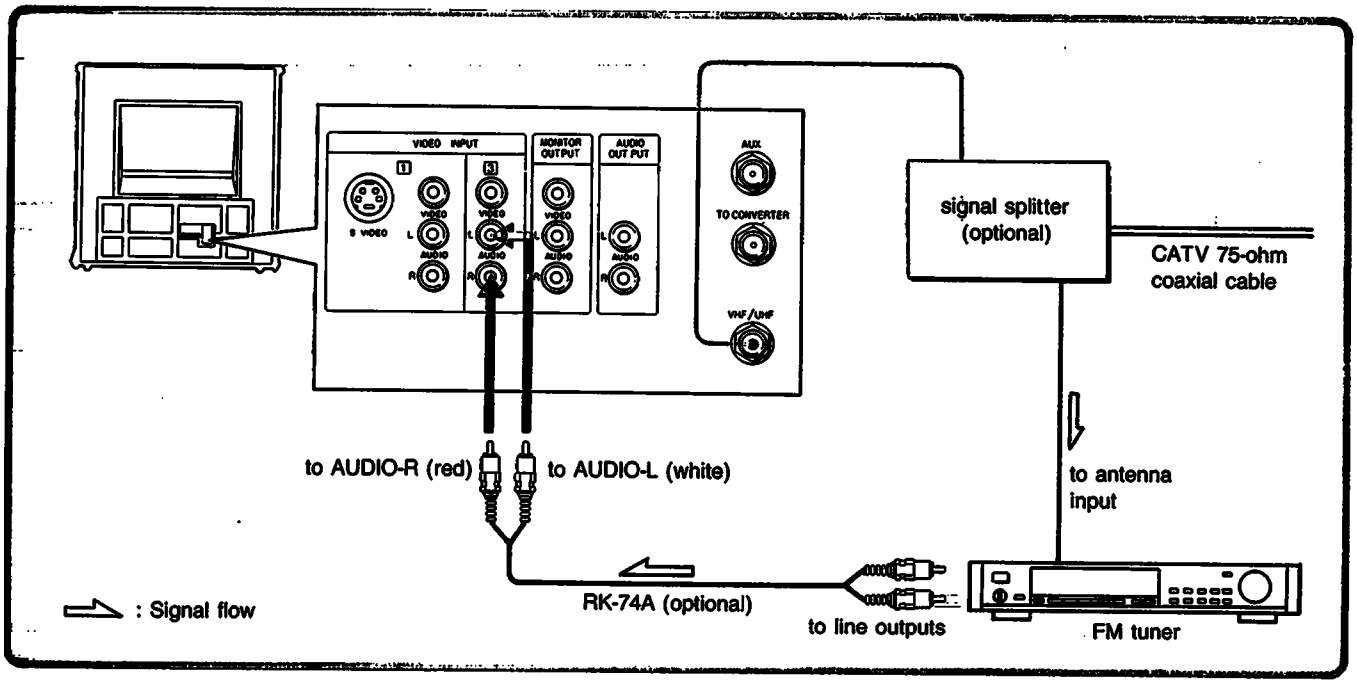


Note

Do not keep the still picture displayed. It may cause to make the phosphor mark on the screen.

Enjoying FM Simulcasted Programs

By connecting an FM stereo tuner to the AUDIO L/R jacks in addition to the usual CATV cable connection, you can enjoy certain cable TV programs with stereo sound, such as MTV (music television), whose stereo audio signals are sent over the cable on certain FM frequencies.
The incoming cable signal is split by an optional signal splitter and fed to both the TV tuner (for picture) and FM tuner (for sound).



Preparation

1 Press POWER to turn on the unit.

2 Press the EXT-A button on the Remote Commander or the TV/VIDEO button as many times as necessary so that the on-screen "EXT-A" indication is displayed.

3 Set the CABLE selector to ON.

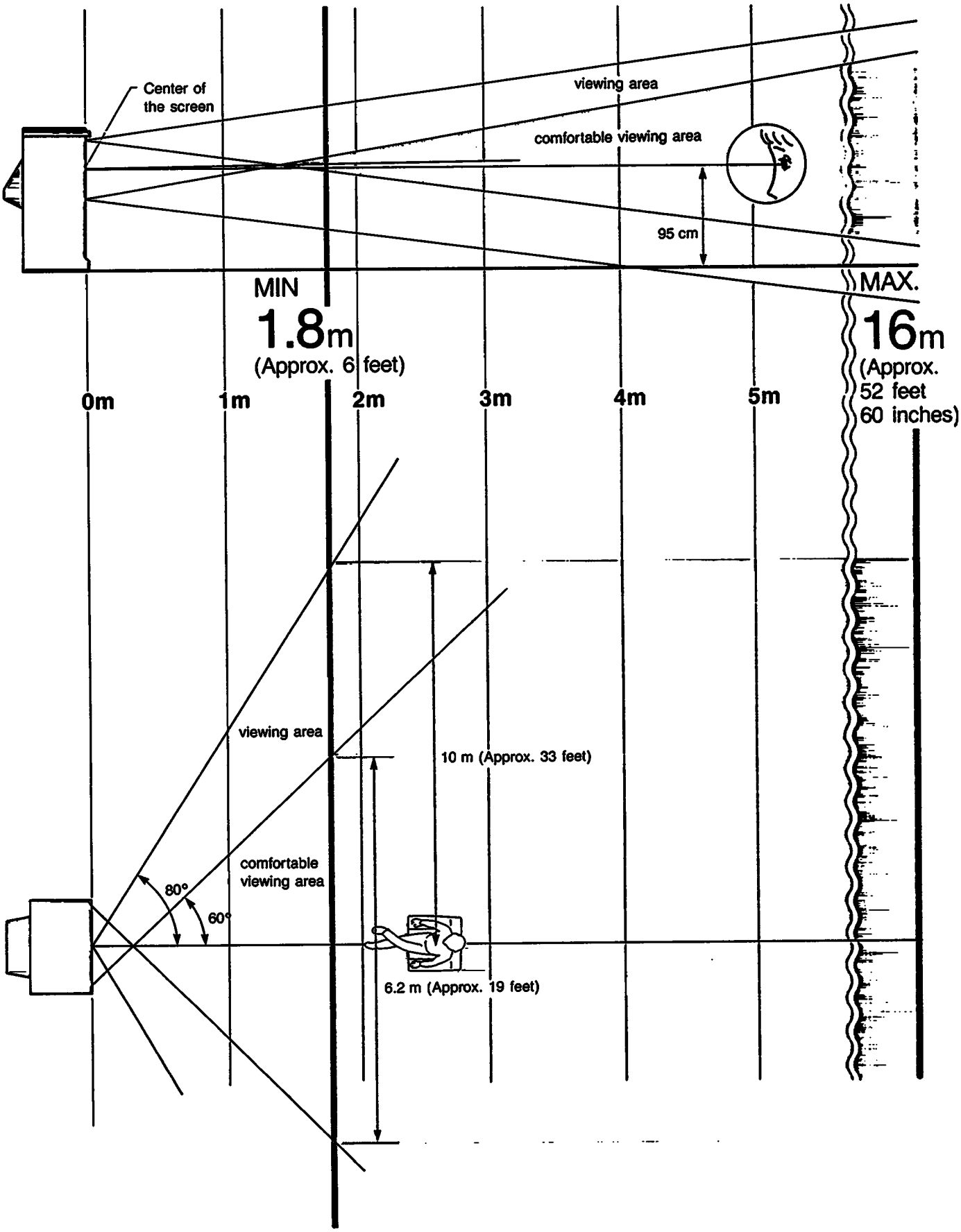
4 Press ANT/AUX button so that the on-screen "AUX" indication is as follows:
For regular cable TV channels: The indication should be off.
For pay cable TV channels: The indication should be displayed.

Operation

1 Set the FM tuner to the frequency designated by the broadcaster.

2 Operate the unit the same as in usual TV viewing.

Notice on Audience Area



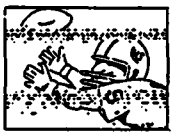
Specifications

Structure	Screen and projector, rear projection type
Projection system	3-picture tubes, 3 lenses, horizontal in-line system
Picture tube	5.5 inch high-brightness monochrome tubes, with optical coupling and cooling system
Projection lenses	High-performance, large-diameter hybrid lens F 1.0
Screen material	Acrylic plastic, Fresnel, lenticular type
Projected picture size (measured diagonally)	46 inches
Resolution	600 lines
Viewing distance	1.8 m (approx. 6 ft.) minimum to 16 m (approx. 52 ft. 60 in.) maximum
Optimum seating arrangement	Within approx. 80 degrees from center
Screen brightness	Typical 350 foot-Lamberts
Television system	American TV standards
Channel coverage	VHF: 2 – 13 UHF: 14 – 69 CATV: 1 – 125
Antenna	75-ohm external antenna terminal for VHF/UHF/CATV
Inputs	VIDEO 1, 2, 3 INPUT (phono jacks) Video: 1 Vp-p, 75 ohms unbalanced, sync negative Audio: 460 m Vrms (100% modulation, 47 kilohms) VIDEO 1 S VIDEO INPUT (4-pin mini DIN) Y: 1 Vp-p, 75 ohms unbalanced, sync negative C: 0.286 Vp-p (Burst signal), 75 ohms 75-ohm external antenna terminal for VHF/UHF/CATV AUX 75-ohm auxiliary antenna terminal
Outputs	MONITOR OUTPUT (phono jacks) Video: 1 Vp-p, 75 ohms unbalanced, sync negative Audio: 460 m Vrms (100% modulation, 1 kilohm) AUDIO OUTPUT (phono jacks) 460 mVrms (variable) (100% modulation, 1 kilohm) TO CONVERTER terminal
Speaker	Two-way coaxial speaker system Woofer 20 cm (8 inches) dia. Tweeter 7.6 cm (3 inches) dia.
Power requirements	120 V AC, 60 Hz
Power consumption	280 W (max.), 185 W (average), 3 W (in standby condition)
Dimensions	1172×1318×748 mm (w/h/d) ($46^{1}/_{8} \times 51^{7}/_{8} \times 29^{7}/_{16}$ inches)
Weight	122 kg (268 lb. 15 oz)
Accessories supplied	Remote Commander RM-766 with 4 size AA (R6) batteries (1) Antenna connector (1)
Optional accessory	Connecting cables (See page 27.)

Design and specifications are subject to change without notice.

Troubleshooting

Disturbances in picture and sound can often be eliminated by checking the symptoms and following the suggestions listed below.

	SYMPTOM	CHECK AND ADJUST
GENERAL	**Poor or no picture (screen not lit), good sound**	• Adjust PICTURE. • Adjust BRIGHT with the A/V WINDOW buttons. • Check antenna/cable connections.
	Good picture, no sound	• Press VOLUME +. • Release MUTING on the Remote Commander. • Check that the MTS button is set correctly. • Is the SPEAKER selector set to ON?
	No picture (screen not lit), no sound	• Is POWER switched on? Power in outlet? • Check that the TV/VIDEO button is set correctly.
	No color	• Is it a color program? • Adjust with the A/V WINDOW buttons.
	Snow and noise only	• Is it an active or the correct channel? • Check the CABLE selector setting. • Check that the ANT/AUX button is set correctly. • Check antenna connections.
	Learning function on the Commander does not work	• Check that the Commanders are positioned properly. • Check if the batteries are exhausted. • If there is fluorescent lamp nearby, move the Commander away from it.
	 **Dotted lines or stripes**	This is often caused by local interference. (ex. cars, neon signs, hair-dryers etc.) Adjust antenna for minimum interference.
	Double images or ghosts	Reflections from nearby mountains or buildings often cause this problem. A highly directional outdoor antenna or CATV cable may improve the picture.
	Try another channel. It could be station trouble.	

	SYMPTOM	CHECK AND ADJUST
CONNECTED EQUIPMENT	**No picture and/or sound for the connected equipment**	• Check that the TV/VIDEO button is set correctly. • Are the connections made firmly? • Is the power of the connected equipment turn on? • Is the connected equipment set correctly?

If the problem still cannot be solved, contact your nearest service facility.

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